LISBON SCHOOL OF ECONOMICS & MANAGEMENT
UNIVERSIDADE DE LISBOA

MASTER OF SCIENCE IN FINANCE

MASTERS FINAL WORK PROJECT

EQUITY RESEARCH: ADIDAS AG

AFONSO VARELA

NOVEMBER 2020

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SUPERVISOR:
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Abstract

This report consists of an assessment of the price per share of Adidas AG for the end of 2020, according to the ISEG's Master's in Finance final work. This report is based on assumptions that I consider acceptable for the period until 2024FY, with projections being based on Adidas' recent performance, the development of the sporting goods industry as well as the development of the world economy. The report is presented in accordance with the format recommended by the CFA Institute. The target price was obtained by applying a Discounted Cash Flow absolute valuation method, as well as a Relative Valuation method, denominated Market Multiples approach. For this method the EV/EBITDA, P/E Ratio and EV/SALES were used. The final recommendation reached for Adidas AG is REDUCE, with a target price of 279,08 euros which represents an upside potential valuation of 0,97%, compared to the current market price of 276,40 euros per share on 16th November 2020. This value was obtained by applying a simple average of the price targets obtained through the DCF method and Relative Valuation. We considered that the company has medium risk, since although Adidas is already an established company in the market, it is always heavily dependent on the evolution of the world economy.

JEL classification: G10 ; G32; G34

Keywords: Equity Research; Valuation; Adidas AG; Sportswear Industry; Footwear

Resumo

Este relatório consiste numa avaliação do preço por ação da Adidas AG para o final de 2020FY, de acordo com o projeto final do Mestrado em Finanças do ISEG. Este relatório tem por base pressupostos que considero aceitáveis para o período até 2024FY, sendo que as projeções foram baseadas na performance recente da Adidas, desenvolvimento da industria de desporto, assim como o desenvolvimento da economia mundial. O relatório está apresentado de acordo com o formato recomendado pelo CFA Institute. O preço-alvo foi obtido através aplicação do método de avaliação absoluto do Discounted Cash Flow, assim como um método de avaliação relativa, denominado método dos Múltiplos de Mercado. Para este método foram utilizados os múltiplos EV/EBITDA, P/E Ratio e EV/SALES. A recomendação final a que se chegou para a Adidas AG é de REDUCE, com um preço alvo de 279,08 euros que representa um potencial de valorização de 0,97 %, face ao preço atual de 276,40 euros por ação, no dia 16 Novembro de 2020. Este valor foi obtido através da aplicação de uma média dos preços alvo obtidos através do método DCF e do método de avaliação relativa. Considerámos que a empresa possui risco médio visto que, apesar da Adidas já ser uma empresa estabelecida no mercado, está bastante dependente da evolução da economia mundial.

Classificação JEL: G10 ; G32; G34

Palavras-Chave: Equity Research; Avaliação de Empresas; Adidas AG; Indústria do Desporto; Calçado

Acknowledgements

The execution of this project was one of my major achievements and represented the end of a significant phase of my life. I would like to thank all the people that played a significant role throughout this trip.

Firstly, to Professor Pedro Rino Vieira for the guidance and availability he gave me during the execution of this project.

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Adidas AG

REDUCE

Medium Risk

November 2020

Portugal

Adidas AG: “Creating the New”

(YE 2020 Price Target of €279,08; 0,97% Upside Potential; Medium Risk; Financial Recommendation: REDUCE)

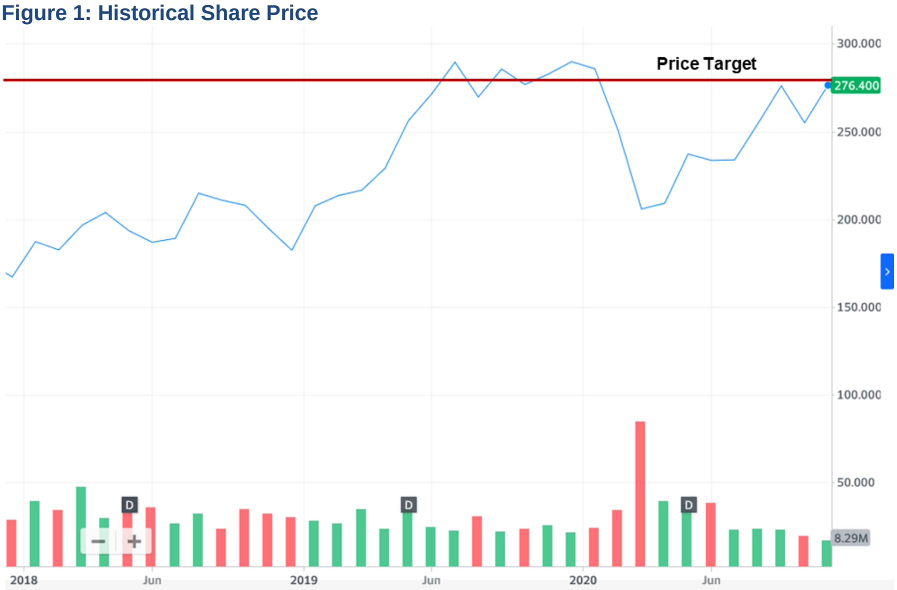
1. Research Snapshot

Adidas AG is a German multinational corporation that is engaged in the production and manufacture of sportswear and sports equipment with a worldwide reach.

Our recommendation for Adidas AG stands for Reduce, with a price target of €279,08 and an upside potential of 0,97%, comparing to the last closing price available (November 16th, 2020). Since the target price is really close to the current market price and with an intrinsic medium risk, the REDUCE recommendation clearly seems to be the most appropriate

The price target was estimated using the simple average of the price target obtained from the Discounted Cash Flow approach (price target: €250,16) and the Relative Valuation model (price target: €308,00). The decision to use the average of the models comes from the fact that both have solid foundations and that together they provide a more consistent and reliable valuation. The Dividend Discount Model was also applied but not used in the final estimation of the price target.

Figure 1: Historical Share Price



Source: Yahoo Finance

Adidas' key risk concerns are connected to political turmoil, related to trade wars, inability to produce disruptive products, macroeconomic factors that could translate in a decline in consumer buying power, and others such as cyber security and counterfeit products.

In terms of financial forecasts for the period 2020-2024, we took into account that we are currently in a serious economic crisis that are strongly affecting revenues in the short term. However, we estimated that from 2021 onwards Adidas will start its recovery, leveraged by its strong focus on emerging markets such as China and innovative distribution channels, such as e-commerce, which is increasingly essential in the company's strategy.

Table 1: Analyst’s Risk Assessment

Low	Medium	High

Source: Author

Table 2: Investment Grade and Risk Classification Matrix

	Low Risk	Medium Risk	High Risk
Buy	>15%	>20%	>30%
Hold	>5% & <15%	>10% & <20%	>15% & <30%
Reduce	>-10% & <5%	**>-10% & <10%**	> -10% & <15%
Sell	<-10%	<-10%	<-10%

Source: Recommendation System

Table 4: : Adidas AG Market Profile

Market Profile	
Open Price	€ 271,00
Closing Price	€ 276,40
52 Week Range	€162,20 - € 317,45
Shares Outstanding	196 million
Market Cap	€ 49.980 Billion

Source: Bloomberg

Table 3: Valuation results

Method	Price Target	Potential
DCF	€ 250,16	-9,49%
DDM	€ 137,52	-50,25%
Multiples	€ 308,00	11,44%
Average Multiples and DCF	**€ 279,08**	**0,97%**

Source: Author

2. Business Description

General Overview

Adidas AG is a German multinational company, founded and headquartered in Herzogenaurach, which together with its subsidiaries, designs, develops, develops and distributes sporting goods worldwide. The company sells shoes, clothing and hardware underneath the names Adidas and Reebok.

Adidas AG has around 2,500 own-retail stores and another 14,000 single-brand franchise stores. It is present at more than 150,000 points of sale and aims to continue to expand its e-commerce strategy, which covers more than 40 countries. It is also the biggest sportswear retailer in Europe and the second largest in the world, after Nike.

Brief History

The company was started by Adi Dassler in 1924, when he ran the company out of a washroom. The company remained family-run until 1987, and nearly went bankrupt in 1992, until Robert Louis-Dreyfus bought the company in 1993 to mark a new beginning for Adidas.

In 2017, after the divestment of its hockey and golf brand, the company concentrated on its core competencies in apparel and clothing and its main labels, Adidas and Reebok. The company currently sells more than 850 million items worldwide per year.

Brands

As far as the brands of the company are concerned, the Adidas Group aims to enter as many parts of the sporting goods market as possible. The key brands of the company are Adidas and Reebok.

<u>Adidas</u>

Adidas, is split into several other sub-brands. Adidas Sport Performance has a strong emphasis on athletes, designing goods that can improve their performance. Its items cover a wide variety of sports. The other sub-brands, Adidas Originals and adidas neo, concentrate on sports fashion lifestyle items.

<u>Reebok</u>

Reebok, an American fitness-inspired company, was acquired 3.1 billion euros in 2006 in order to increase its market share of Adidas in the American Market and expand its portfolio of brands. It offers a variety of unique products for the following categories: fitness training, studio, classical, fitness running and walking.

The brand Reebok benefits from a high movement in exercise, a growing number of gyms around the world and a larger percentage of amateur and professional fitness athletes.

Performance Overview 2019

Adidas continued the path of growth in 2019. The sportswear group obtained sales of 23,640 billion euros, an increase of 6% compared to the previous year. Net income shoot up 12% in the same period, to 1,918 billion euros.

By regions, the company managed to grow in two main markets. Sales in North America increased by 13% to 5,313 billion euros, while in Asia-Pacific they increased by 12% to 8,042 billion euros. The rise was especially high in China, with an increase of 15% in its revenue. Sales in the rest of the group's main markets slighltly increased during last year. In Europe, the group gained 3% in sales volume, up to 6,071 billion euros, and in Latin America they the revenues increased 2%, with 1.660 billion euros reported at FY2019. The group's revenue also increased in emerging markets by 14% to 1,302 billion euros.

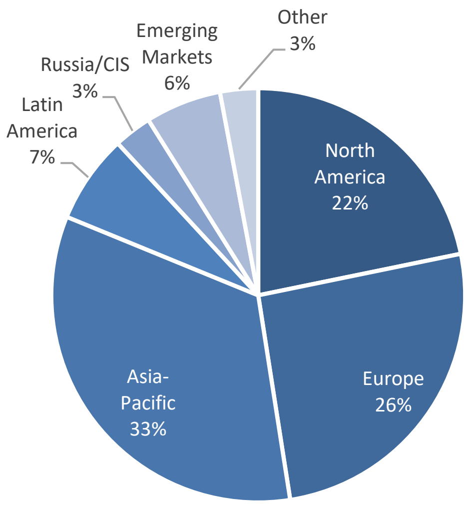
Figure 2: Adidas logo

Source: Company information

Figure 3: Reebok logo

Source: Company information

Figure 4: Net sales by region



Source: Company information

By segments, footwear was confirmed as the leading sector of the company, with 13.521 billion euros in sales, an increase of 6% in contrast to 2017. Yet, apparel was the area with the highest growth rate, with a rise of 9% and sales volume of 8.963 billion euros. Also, the hardware product category, which includes equipment like bags, balls and fitness equipment, was the smallest category in terms of revenues, accounting around 5% of the group's revenues in 2019.

By brands, revenues of the Adidas brand amplified 7%, to a worldwide total of 21,505 billion euros, and for Reebok the sales also slightly improved 2%, to a total of 1.748 billion euros.

In order to minimize production costs, Adidas subcontracts almost 100% of manufacturing, through independent partners primarily located in Asia (73% of the total).Asia accounts for 98% of footwear volume produced, where Vietnam represents the largest sourcing country (43%), followed by Indonesia (28%) and China (16%). Regarding apparel, Asia produced 91% of the total volume produced but, in this situation, Cambodia is the largest source country (23%), followed by China (19%) and Vietnam (19%).

Marketing

The high demand of Adidas in the categories of practical sportswear and luxury casual apparel can be partly explained by the advanced placement of the product in its footwear division.

Adidas invests half of its promotional budget on endorsement arrangements, which vary greatly across sporting clubs, games, and athletes. Football is the most comprehensive division of the business and requires a great number of sponsorships. Adidas also has football, soccer, rugby, boxing and other endorsement agreements.

Key Performance Indicators

In order to drive and steer creation of shareholder value, Adidas' Management focuses on a set of major financial Key Performance Indicators (KPIs). Sales and operating profit growth, paired with a focus on management of operating working capital, are the main contributors to operating cash flow improvements.

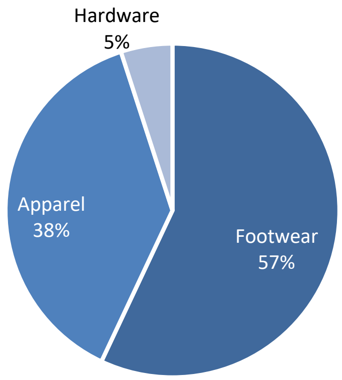
1. **Operating margin** is one of the big KPIs of Adidas to drive and boost its operating performance. It stresses the productivity of the top line and organizational performance of the organization. Sales and gross profit growth and tighter regulation of operating expenses are the key reasons for improving operating margin: Adidas' management places strong emphasis on strictly managing operating expenses to fuel sales growth.
2. **Working Capital Management** - The productivity of the balance sheet depends to a large extent on our operational working capital management due to the comparatively low amount of fixed assets needed in our sector. Operating working capital includes receivable accounts plus inventories minus payable accounts.

Company Strategy

The company unveiled a five-year turnaround plan back in mid-2015 that called for accelerated product development and rotation, expansion of its direct-to-consumer platforms, and stronger communication strategies with its consumers, vendors and partners. In order to drive faster growth globally, Adidas has made many changes to its corporate model since then. In the new corporate plan, the core pillars are:

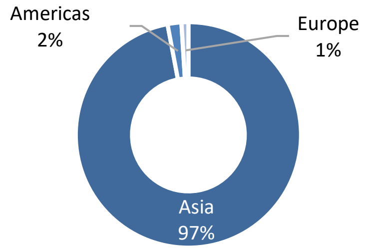
- **Speed**: applies to patterns in fashion and the supply of stocks. Instead of pre-designing all products before each season, Adidas plans to guarantee that it is never out of stock and is able to adapt effectively to emerging trends, even introducing new styles between seasons to keep up.

Figure 5: Net sales by product category



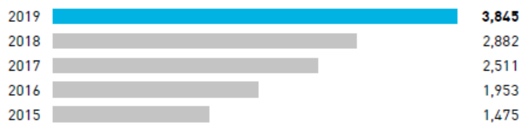
Source: Company information

Figure 6: Footwear production by region



Source: Company information

Figure 7: Historical EBITDA



Source: Company information

Figure 8: Historical Operating Margin

Source: Company information

Figure 9: Historical Average Working Capital

Source: Company information

- **Cities**: It applies to where most of the clients of the company reside and the impact they have on designs. It also entails updating the global shops to create a more premium shopping experience..
- **Open source**: the company opens its doors and welcomes all innovative people to learn, develop, exchange and influence future sports and sports culture, including players, fans and partners. They try to bring to the market cool goods. The company also collaborates to inspire world-famous football stars, celebrities and singers.
- **Digital**: The digital revolution is radically transforming the way clients of Adidas operate and the way we work. Technology has helped the company develop more direct ties with its customers

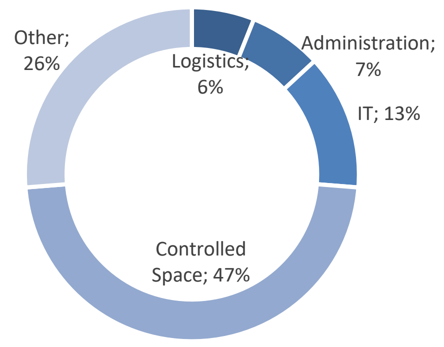
As almost all industries and markets, Adidas is now moving to a more digitally-focused service with the goal of achieving EUR 4 billion in e-commerce revenue by 2020..

Although already a huge brand in the region, Adidas believes North America offers the most growth potential moving forward, which will turn up the heat on the competition with Nike.

Historical Performance

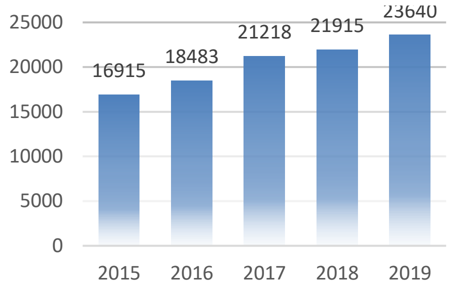
Since the launch of the strategic plan in mid- 2015 Adidas' annual revenue rose 40% between 2015 and 2019, its gross margin expanded from 48.3% to 52%, and its operating margin rose from 6.5% to 11.3%. Adidas' stock has also rallied roughly 260% over the past five years, easily outperforming its main rivals Nike and Under Armour. The cause for this increment revenues was caused by the high growth in the North American and Chinese geographical markets, supported by a bigger brand recognition, due to the recent investments in marketing.

Figure 10: CapEx by type (%of total)



Source: Company information

Figure 11: Historical Net Revenues



Source: Company information

Figure 12: Adidas Historical Performance

Source: Yahoo Finance

3. Management and Corporate Governance

Adidas AG is known by showing great efforts in improving its relations with shareholders, clients and employees. This can be proved by the company’s high quality of annual reports, creation of audit, remuneration and strategy committees and introduction of the company’s own code of ethics.

At the group, Corporate Governance stands for: responsible, value-based management and monitoring focused on long-term success, efficient cooperation between the Executive Board and Supervisory Board, protection of the interests of the shareholders, employees and other stakeholders, transparency in all the corporate communication, and appropriate risk management. The company has established a corporate governance framework that addresses these topics.

The company is subject to the laws laid down in German law requiring the presence of two independent boards, allowing the company to attain the continuity and transparency which shareholders strongly appreciate: the Executive Board and the Supervisory Board.

Apart from the two boards mentioned above, Adidas has also a Steering Committee, General Committee, an Audit Committee and a Nomination Committee,

Executive Board

Body that is directly responsible for the entire operation and management of the company. The most critical strategic decisions are taken by this board, namely in setting the plan of the organization, the priorities to be accomplished in its activities, as well as its risk reduction and compliance policies.

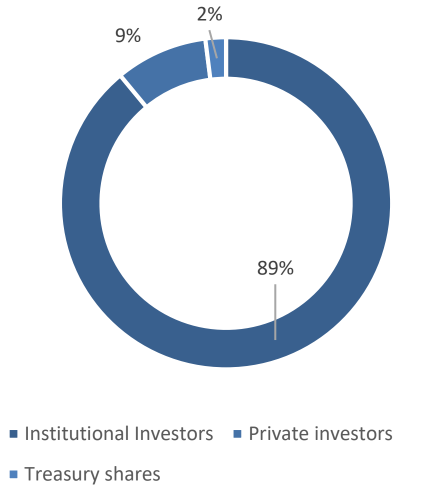
It is composed by five members. Each board member is responsible for at least one major function within the company:

- **Kasper Rorsted** - Chief Executive Officer since 2016. Holds a degree in International Business Studies from the Copenhagen Business College, Denmark, from where he graduated in 1985, and completed a series of Executive Programs at Harvard Business School, USA
- **Roland Auschel** – Responsible for Global Sales and member of the board since 2013. Holds Bachelor’s degree in European Business Studies from the Münster University of Applied Sciences, Germany, and the University of Hull, UK, as well as an MBA from the University of Miami, USA.
- **Brian Grevy** – Responsible for Global Brands and member of the board since 2020. Studied at the Business School in Vejle, Denmark, and he held various leadership positions at Adidas since 1998.
- **Harm Ohlmeyer** – Chief Financial Offcer since and member of the since 2017. Holds a degree in Business Studies from the University of Regensburg, Germany, as well as an MBA from Murray State University, USA.
- **Martin Shankland** – Responsible for Global Operations and member of the board since 2019. Holds a Bachelor of Commerce degree from the University of New South Wales, Australia,

Supervision Board

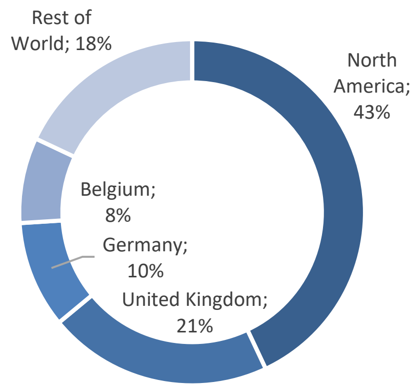
Body in charge of supervising and advising on the main issues of the company and currently composed by sixteen members. Eight of its members are elected by the Annual General Meeting and eight members are elected by the employees. The Supervisory Board's key roles include the appointment and resignation of members of the Executive Board, the oversight and consultancy of the Executive Board, the review

Figure 13: Shareholder structure by investor group



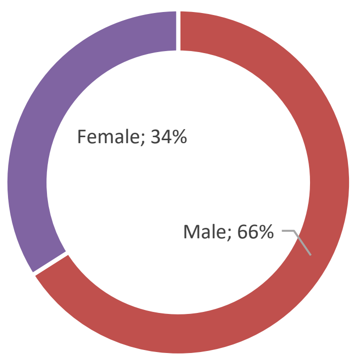
Source: Company information

Figure 14: Shareholder structure by region



Source: Company information

Figure 15: Management positions by gender



Source: Company information

of financial statements, and the authorization of essential operational strategy and corporate decisions.

Since August 11, 2020, Thomas Rabe has been in the function of Chairman of the Supervisory Board, having replaced Igor Landau after 16 successful years at the helm of the board.

Shareholder Structure

The Adidas AG share is listed as ADS.DE on the "Deutsche Börse" stock exchange in Frankfurt, and is also part of the DAX-30 index, which includes only the largest German companies listed.

Adidas AG is currently estimated to have more than 90,000 shareholders. In the latest ownership analysis (January 2020), the company identified almost 100% of their shares outstanding. Institutional investors represent by far the largest investor group, holding 92% of shares outstanding. Private investors and undisclosed holdings account for 8%. Adidas AG detains 1% of the company's shares as treasury shares.

In terms of geographical distribution, the North American market currently accounts for 43% of institutional shareholdings followed by the UK with 21% (2018:21%). Identified German institutional investors hold 10% of shares outstanding. Institutional investors from Belgium account for 8% and 18% of institutional shareholders were identified in other regions of the world.

Dividend Payment

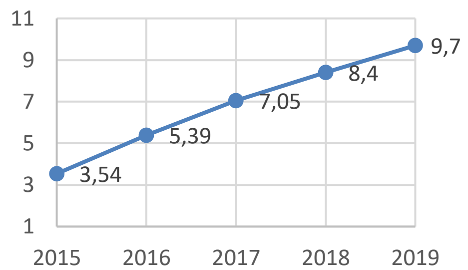
The group has been increasing dividends since 2012, which gives a sign financial healthiness to its investors. In 2019 the dividend was €3.85 per share (with 195,969,387 dividend-entitled shares, resulted in a dividend payment of €752 million), which represented an increase of 48% from the 2017 dividend of €2.60 per share.

Table 5: Institutional shareholders structure

Institution Name	Shares Held	% Outs.
BlackRock Institutional Trust Company, N.A	12,843,133	6.41
Fidelity Management & Research Company LLC	9,870,500	4.93
Capital Research Global Investors	6,633,809	3.31
The Vanguard Group, Inc.	5,670,540	2.83
Norges Bank Investment Management (NBIM)	4,396,500	2.19
DWS Investment GmbH	3,329,719	1.66
Allianz Global Investors GmbH	2,479,658	1.24
Union Investment Privatfonds GmbH	2,386,062	1.19
MFS Investment Management	2,266,974	1.13
Capital World Investors	1,855,650	1.06

Source: Bloomberg

Figure 16: Basic Earnings Per Share



Source: Company information

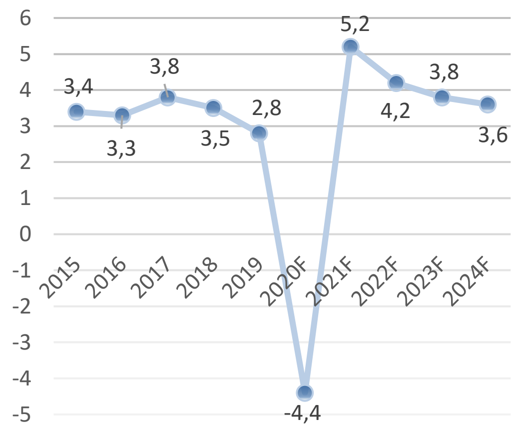
4. Industry Overview and Competitive Positioning

2019 Economic Overview

According to IMF, global growth in 2019 recorded its weakest pace since the global financial crisis a decade ago, reflecting common influences across countries and country-specific factors. Some of the most relevant topics/factors were during the whole year were the following:

- Growing barriers to trade and related volatility have weighed globally on market confidence and operation. In certain situations (advanced economies and China), these trends have accelerated the cyclical and systemic slowdowns already underway
- the economic climate grew more volatile, companies became fearful of long-term spending and decelerated global acquisitions of machinery and equipment. Household demand for consumer goods also decreased, although there was a pick-up in the second quarter of 2019.
- Central banks reacted aggressively to the weaker activity and cut interest rates.
- These measures also avoided a greater recession. Lower interest rates and favorable financial environments strengthened continued resilient sales of non-sustainable goods and services, promoting job growth. Tight labor markets and gradually rising wages, in turn, supported consumer confidence and household spending.

Figure 17: Global Real GDP (Historical and Projected – in %)



Source: International Monetary Fund (IMF)

Near-term Economic Outlook

Accordingly, according to the Global Economic Outlook report released by the IMF in October 2020, global growth is expected to be-4.4% in 2020. This number represents better-than-anticipated GDP outputs in the second quarter, mainly in emerging economies, where production started to rise earlier than predicted after lockdowns in

May and June, as well as signs of greater growth in the third quarter. Economic growth is expected to be 5.2% in 2021.

Global Sporting Goods Industry Overview

Adidas Group is included in the Global Sporting Goods Industry, where it is the second largest player. The sporting goods industry includes the manufacturing and the retailing of sporting goods, such as exercise and fitness equipment, athletic uniforms, specialty sports footwear, apparel, and other accessories and equipment.

General characteristics of this industry are constant growth, primarily related to the growing health and sports awareness, health lifestyle trend, improved living standards in the developed countries, increasing number of sport and fitness activities, and also linked to the increase in women participation in fitness and sport activities.

The Global Sporting Goods Industry faces a very segmented market, where demand is constantly changing and companies need to reinvent their products, accordingly, coming up with innovative products for their targets. The total size of the Global Sporting Goods Industry was predicted to reach € 140 billion by the end of 2020.

Outlook of the Industry

The global sporting goods industry continued growing in 2019, driven by continued global trends such as increasing penetration of sportswear rising sports participation rates, and increasing health awareness. Additionally, digital developments continued to restructure the sports industry around the world. Social fitness remained a predominant theme and the e-commerce channel continued to see further expansion. However, risks related to trade protectionism and geopolitical tensions have increased.

However, due to the current crisis caused by the pandemic, a severe economic recession is expected in 2020, with a predicted recovery in 2021, although forecasts at this time are highly uncertain. As a result, the entire sports retail industry will be severely affected, with major companies having a decline in sales for FY2020.

Assuming the economy starts to return to normal in 2021, most markets globally would set to continue expanding at robust rates. Progressing urbanization and a growing middle class in many developing economies are predicted to further contribute to a growing industry. In developed economies, the sporting goods industry is predicted to expand, as wage increases on the back of generally strong labor market conditions will support consumer spending on sporting goods.

Worldwide rising sports participation, health awareness, developments through e-commerce, increasing presence in Emerging Markets, is projected to continue to boost demand for sportswear products.

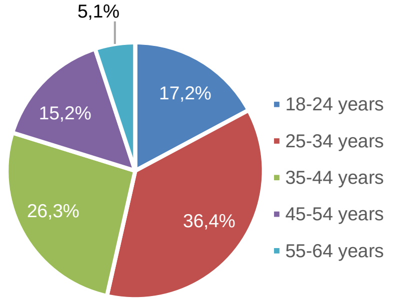
In terms of supply analysis, around the world there is more and more concern with what kind of materials are used in the manufacture of footwear or apparel. The use of leather from some types of species is a controversial issue, and Adidas has increasingly moved towards the use of recyclable and environmentally friendly materials in the manufacture of products. For example, Ultraboost, one of the best-selling shoes in the world, is made exclusively from recyclable materials.

Peer Companies

Adidas AG has been one of the global leaders in the sporting goods industry for a long time, but only in 1995 the company started operating worldwide. In 2006, with the acquisition of Reebok for 3.1 billion euros, the Group brought together two of the world's most respected and best-known companies in the sporting goods industry, giving the Group a stronger foundation in North America. Recent moves have resulted in a stronger positioning and increased consumer interest in the brand.

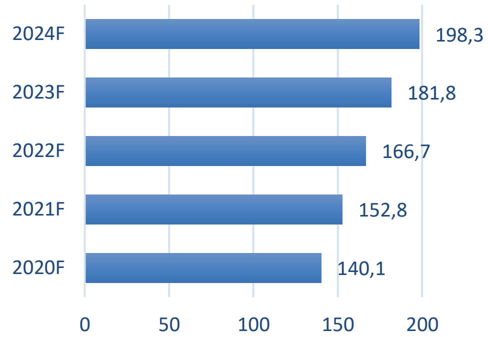
Adidas primarily competes against mainstream sportswear and outdoors retailers, all of which focus on developing footwear and apparel that enhances physical activity experience. The competitive environment requires Adidas to continually improve upon quality, selection variety, and consumer experience through innovative R&D.

Figure 18: Consumers by age



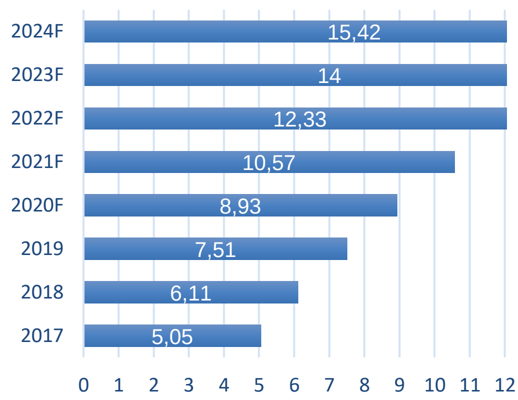
Source: Statista

Figure 19: Forecasted Evolution of the Sports & Outdoors Market (Pre-Covid) – in billions €



Source: Statista

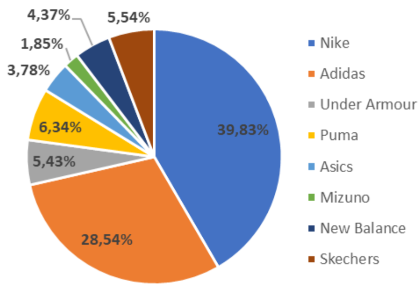
Figure 20: Penetration rate in the Sporting Goods Market – in %



Source: Statista

Nike is clearly Adidas biggest threat, although other companies such as Under Armour, Puma and other minor brands also compete for market share.

Figure 21: Sporting Goods Market Share



Source: Statista

In Figure 21 we can verify the biggest players in the sporting goods industry, ordered by the revenues in 2019. Having this graphic in consideration, I tried to approximately reach a market share, in the sporting goods industry, for each of the companies analyzed.

In order to do a complete analysis of Adidas, identifying the companies that share the closest business characteristics is important. Therefore, having in account the Figure 4 mentioned before, we can reach the conclusion that Nike is Adidas biggest competitor, but there are also a lot of different players in the industry.

To choose the peer companies group, the criteria applied was market capitalization of over 1 billion euros, footwear as the primary source of revenues, publicly traded and headquarters and stronger markets in USA and Europe. The restricted group obtained was composed by Nike, Puma, Under Armour and Skechers.

To identify the closest comparable companies, some firms were eliminated due to their current unique market focus and revenues. Having filtered the companies, we reached a group of four Peer Companies composed by:

- **Nike** - World's leading sports footwear and apparel company and the biggest rival of Adidas. Nike designs, develops, and sells a variety of products and services directed to sports like basketball and football, as well as in running, men's and women's training, and other action sports.
- **Puma** - Puma is a German company that along with its subsidiaries, designs, develops, sells, and markets footwear, apparel, and accessories. The company offers performance and sport-inspired lifestyle products diverse sports. The company sells its products through Puma stores and factory outlets, as well as online in approximately 120 countries.
- **Under Armour**- Company involved in the development, marketing, and distribution of branded performance apparel, footwear, and accessories for men, women, and youth. It operates through the following segments: North America, EMEA, Asia-Pacific, Latin America, and Connected Fitness. The company was founded in 1996 and is headquartered in Baltimore, MD
- **Skechers** - Global apparel and clothes business with industry-leading growth and substantial prospects for further global expansion. The business designs and produces more than 3,000 lifestyles and sporting footwear models for men, women and children. It offers its goods in more than 170 countries across the globe through its national networks and delivery capability.

Figure 22: Nike logo

Source: Company information

Figure 23: Puma logo

Source: Company information

Figure 24: Under Armour logo

Source: Company information

Figure 25: Skechers logo

Source: Company information

Key Drivers of Industry Profitability

In order to understand where growth and profitability comes from, it is highly important to acknowledge and analyze the key drivers of the sportswear industry and thus, allow more reliable predictions. The drivers could emerge from internal or external variables and the capacity of the company to adapt. The major factors driving success for the companies in this industry are the following:

- **Efficiency throughout the supply chain:** To minimize the amount of time it takes to deliver a new product on the market, large companies in this industry are now focusing on improved competitiveness throughout their supply chain and manufacturing processes. A responsive supply chain helps companies to adapt more rapidly to emerging developments and as a result, encourages the company to offer goods to customers more rapidly, which would have a positive effect on revenues:
- **Brand Equity:** Companies already established in the market, such as Adidas, will always have an advantage over smaller companies or beginners, because most consumers do not dedicate much time to researching new products or companies and by default buy products from better known

brands. For this reason, we consider brand recognition one of the main revenue's drivers of profitability.

- **E-Commerce Expansion:** In line with consumer interest, firms in the industry are moving their emphasis from conventional retailers to direct-to-customer channels. This switch to e-commerce has been motivated by the opportunities that both customers and companies gain, because it allows retailers to adapt products to the needs of consumers, hence enhancing the corporation's consumer relations. It plays a vital role in the capacity of companies to capture market share.
- **Marketing Costs:** Adidas recent boost in sales has been driven by important marketing investments on partnership assets, which accounts for around a quarter of Other Operating Expenses in 2020. These types of investments are especially important in order to create brand awareness but there needs to be prudent investing these sums of money, because convincing well-known personalities costs a lot. For this reason, we consider marketing expenses one of the main cost drivers of profitability.

Figure 26: Marketing and point-of-sale costs

Source: Company information

Competitive Position

Table 6: SWOT Analysis

Strenghts	Weaknesses
- Diversified portfolio of products - Distribution network - Effective marketing strategies - Strong financial position - Brand recognition	- High dependence on retail distributors - Limited number of brands - High price range
Opportunities	**Threats**
- Growth in Emerging Markets - Product line expansion - Mergers & Acquisitions of innovative niche companies - Change of habits – increasing concerns of the population with healthy lifestyles E-commerce growth	- World economic recession cause by the COVID-19 pandemic - Counterfeit products - Current political instability - Intense competition all over the world

Source: Author analysis

<u>Porter's 5 Forces</u>

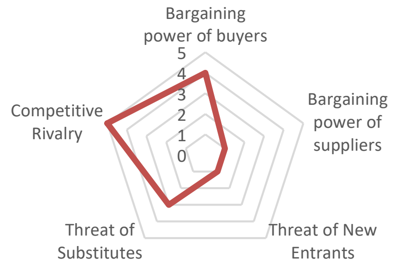
Threat of New Entrants | Low

The likelihood of new entrants to break into the sporting goods industry is relatively limited due to the high entrance barriers. A firm can freely enter in the industry, but it is particularly challenging to keep up with the competition and acquire market share. Significant investment and fixed costs, restricted access to raw materials, restricted distribution channels, economies of scale and secured intellectual property rights are often the most common barriers to entry.

Rivalry amongst Competitors | High

Compared to other related sectors, the competitiveness between existing competitors is significant. There are many other smaller competitors, aside from the major competitors such as Nike and Puma, which add to the level of competition in the industry. While the level of penetration in the industry has increased, the current players are usually involved in an active market share war. Almost all brands invest heavily in marketing to increase brand awareness.

Figure 27: Porter's Five Forces



Source: Author analysis

Threat of Substitutes | Moderate

Adidas number of competitors is not so high but not so insignificant either. There are small and large players, selling goods at a wide variety of prices. Several of them satisfy the high-end client's needs, while local rivals have alternatives at lower costs. The challenge faced by alternative products is mitigated by the reliability of the company products and marketing strategies. Because a large part of its core market lives there, the company has concentrated on marketing in the urban markets in order to further,mitigate the threat.

Bargaining Power of Buyers | Moderate/High

While individual customers may not have any major role, they have a very significant impact as a group. In the sporting goods industry, there are many local and foreign firms fighting for market share and the switching costs are minimal for the consumers. The product quality and marketing of Adidas, however, mostly mitigates this factor. Adidas has distinctive product quality, style and success and that is why the brand has been able to create an unprecedented degree of customer satisfaction**.**

Bargaining Power of Suppliers | Low

There are many different available suppliers for Adidas products, so the bargaining power of them is low. With many types of suppliers in the chain, Adidas has a vast and multi-layered supply chain, so none of the suppliers have the ability to influence Adidas. The industry also has a relatively high raw material availability scattered all over the world.´

5. Investment Summary

Considering the Valuation performed we recommend to **REDUCE** Adidas AG shares. The Valuation through **Discount Cash Flow Approach** resulted in a **downside potential of -9,49%**, but the valuation through **Market Multiples Approach** resulted in an **upside potential of 11,49**%. Taking this into account, we applied a weight of 50% for each of the methods and arrived at the target price of **€279,08** with an upside potential of 0,97**%.** Since this is a price close to the market, and with a medium risk associated with the company, we think that the REDUCE recommendation is the most adequate.

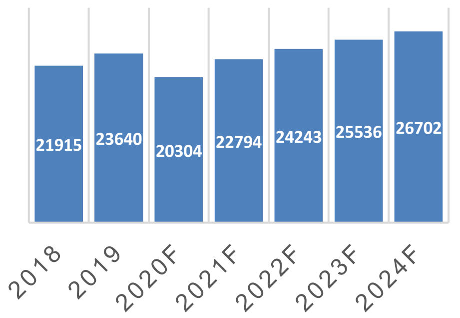
Table 7: Valuation Results

Method	Price Target	Potential
DCF	€ 250,16	-9,49%
DDM	€ 137,52	-50,25%
Multiples	€ 308,00	11,44%
Average Multiples and DCF	**€ 279,08**	**0,97%**

Source: Author estimations

The key drivers behind the analysis we made are the economic crisis caused by COVID-19 that is taking place today, its recovery from 2021 onwards, the continued increase in awareness with a healthy lifestyle and a growing influence of China on Adidas's revenues.

Figure 28: Net Revenue Projected 2018-2024F



Source: Author estimations

It is also assumed that except for 2020, Adidas will maintain a consistent level of debt and CAPEX over the years. Due to the current uncertainty about the future, revenue projections are closely related to the growth of the economy in each of the regions of operation and also the evolution of the sports market.

The terminal growth rate is also considered to be a key factor in the valuation made and is expected to be equal to 2.99 %. It was calculated on the basis of a weighted average growth rate of the long-term real GDP for each of the main regions, in which the weights are the revenues each region.

Valuation Methods

The final price target of **279,08€** was computed using the average of the price targets obtained from the Discounted Cash Flow model (DCF) and the Relative Valuation. The **DCF model resulted in a price target of €250,16**, **a downside potential of –9,49%,** and the relative valuation, through the **Market Multiples Approach, resulted in a price target of 308,00€, representing an upside potential of 11.44**%. Both methods have contradictory recommendations but are consistent with recent variations in Adidas stock prices.

In addition to the DCF model and the Multiples valuation, the Dividend Discount Model, with a target price of €137.52 and a downside potential of 46.07%, was also estimated, representing an unrealistic price and SELL recommendation due to the conservative assumption of the Dividend Payout Ratio.

Investment Risks

It must be noted that Adidas business activity is sensitive to several key factors that cannot be controlled by the company´s management, such as the volatility of currencies, macroeconomic landscape and political instability in core countries.

Additionally, it was performed a sensitivity analysis and a Monte Carlo simulation to estimate the impact of the main investment's risks of the price target, such as the WACC rate and terminal growth rate. These two analyzes support our REDUCE recommendation. According to the Monte Carlo simulation, the price target obtained was 264,79€.

6. Valuation

We used three standard approaches to value Adidas, AG**: Discounted Cash Flow (DCF) approach, the Market Multiples approach for the relative valuation model, and finally, the Dividend Discount Model (DDM)** approach.

We used the Discounted Cash Flow (DCF) approach for the absolute valuation model. This is perceived as being the most acceptable way to value the company, considering that there is uncertainty about the policy on dividends. Cash flows are projected to be positive in the forecast years, a capital reinvestment plan is in place and the company plans to follow a deleveraging policy-a key factor that has contributed to the use of FCFF.

The DCF valuation was computed in accordance with the constant-growth FCFF model, for 5 years forecast, until 2024, and resulted in a target price of €250,16 for Adidas' 2020 fiscal YE, a downside potential of –9,49% considering the price of €276,40 on November 16th, 2020 and a REDUCE recommendation.

For the relative valuation model, we used the Market Multiples approach. In order to evaluate the firm within the industry, Peer Companies were selected, and it was performed a valuation through EV/EBITDA, EV/SALES and P/E multiples.

Regarding DDM approach, future dividends were discounted to their present value through investor´s rate of return (Re) estimated using the Capital Asset Pricing Model (CAPM), and the price target was reached by dividing the present value of dividends by the total number of shares outstanding.

Forecast Analysis

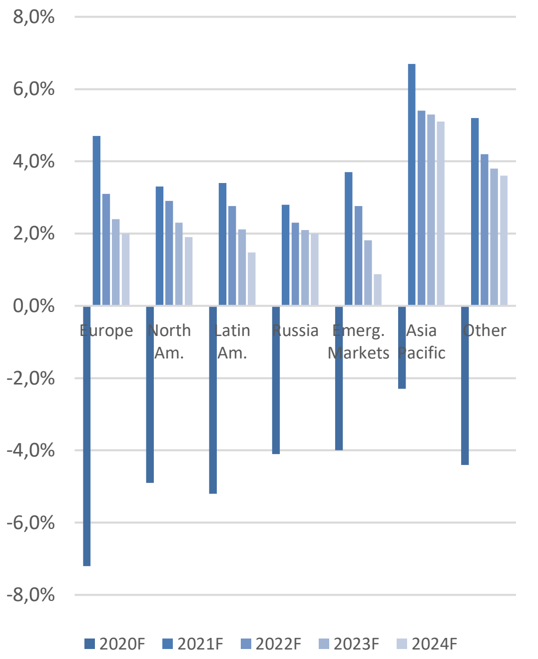
On this section there are explained the items that were forecasted with more complex procedures, and the ones that derive directly from internal business analysis (business description), industry analysis and competitive positioning.

Revenues

Following the same method as the company, the total value of revenues was obtained by estimating the evolution of the revenues in the different 7 markets in which it operates. Nevertheless, for a better understanding, it is necessary to understand that Adidas has been recording double-digit increases in revenues on a currency neutral basis. However, due to the COVID-19 pandemic and respective slowdown in the world economy, I assumed a big decrease in the company's sales for 2020, and that from 2021 sales will begin to return to similar levels similar to the pre-pandemic period.

It should be noted that the duration of this period is highly uncertain and that not even Adidas itself has indicated reliable projections for the end of this year.

Figure 29: Revenues Market Share by region (2020F-2024F)



Source: Company data and own estimations

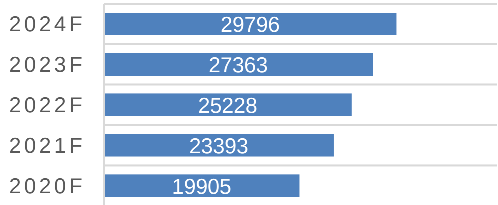
Due to the current economic instability around the world, I have tried to base my projections on simple, reliable, and effective assumptions. Taking this into account, the results were obtained considering three different inputs:

1. **Growth of the sports and outdoor market worldwide** - based on market data projected by reliable sources, it is believed that by 2024 the sports trade market will grow with an average annual CAGR of 9.073%. As Adidas' growth is directly associated with the growth of the sports market, it was understood that it was a consistent source of information.
2. **Bloomberg estimations** - average of the projections of 36 analysts from different institutions. We found it appropriate to use this source of information, mainly for the first years of the projections, due to the current economic instability.
3. **GDP estimations** published in October 2020 by the International Monetary Fund. This input was used with more weight in the revenues evolution as the years passed until 2024, as reaching the perpetual growth rate. We used the estimates of the real GDP per year and for each of the seven regions where Adidas operates, and then applied the weights each region has in the total revenues to reach the annual weighted GDP growth. The weights for 2020 were the same as for 2019, but for the remaining years we assumed slight variations in the weight of each region, considering the trend of higher sales growth in the Asia-Pacific region in contrast with Europe.

We gave a high initial weight to the Bloomberg estimations, due to the current pandemic crisis, but it decreased until 2024 as the other inputs seem to be more reliable over the years. The sports market growth estimates were only used from 2021 onwards, and the GDP estimates were given an increasing weight until 2024 due to the high correlation that exists between the evolution of the world economy and the growth of Adidas' long-term activity.

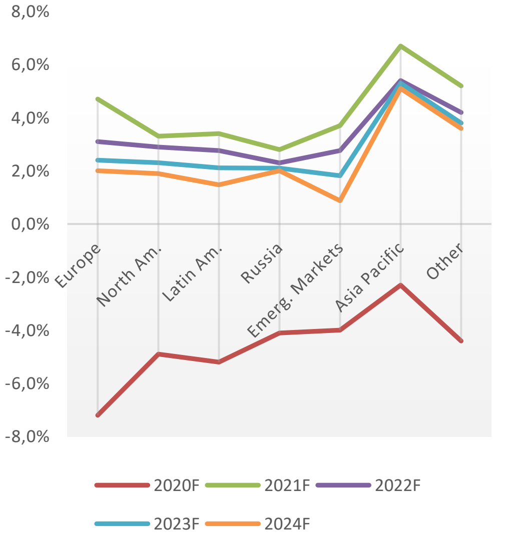
These three distinct sources allowed the creation of a more precise prediction tool and in the end we combined the weight each input has per year and reached the final projections of the revenues until 2024.

Figure 30: Average Bloomberg estimations (2020F-2024F)



Source: Bloomberg

Figure 31: Real GDP Forecasts by region (2020F-2024F)



Source: International Monetary Fund (IMF)

Table 8: Revenues Forecast (in billions €)

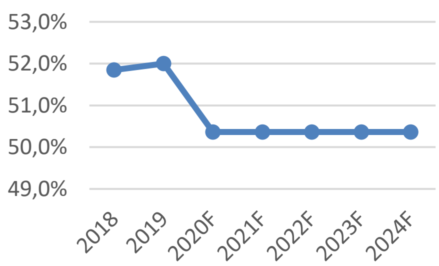
Weight of the different sources	2020	2021	2022	2023	2024
Bloomberg	85,0%	55,0%	30,0%	10,0%	0,0%
Market	0,0%	10,0%	25,0%	25,0%	25,0%
GDP	15,0%	35,0%	45,0%	65,0%	75,0%
Final Projections	**2020**	**2021**	**2022**	**2023**	**2024**
Bloomberg	-15,804%	17,522%	7,846%	8,462%	8,893%
Market	9,073%	9,073%	9,073%	9,073%	9,073%
GDP	-4,540%	4,912%	3,853%	3,416%	3,063%
Weighted Average	**-14,114%**	**12,263%**	**6,356%**	**5,335%**	**4,565%**
Revenues	**20304,28**	**22794,28**	**24243,11**	**25536,48**	**26702,29**

Source: Author estimations

Gross Profit Margin

During the period under review, it can be observed that Adidas has shown a steady growth in its gross profit margin, from 48.3% in 2015 to 52.0% in 2019. However, due to the current pandemic and the goods stopped in inventory, we assumed as gross profit margin the average of 50,40% of the last five years in percentage of revenues. This value is below the one observed in 2019 and is equivalent to 2017.

Figure 32: Historical and Projected Gross Profit Margin (2015-2024F)



Source: Company information and own estimations

Other Operating Expenses

The operating expenses are mainly comprised by marketing related costs and overhead expenses. With no indicators that might influence drastic changes on other operating expenses, this item shown a similar behavior during the historical period (2015-2019). With a minimum percentage of sales of 41,3% (2017) and maximum of

42.6% (2015), the percentage´s historical average of 41,9% was assumed for the forecasted period 2020F-2024F.

CAPEX and Depreciation&Amortization

Regarding the capital expenditures in Property, Plant and Equipment and Intangible Assets, we assume Adidas will continue to invest in new assets to follow the international strategy of the company. Adidas did not disclose any future forecasts which led me to estimate these future capital expenditures through a method based on the combination YoY% growth of revenues and the YoY% equal to the average growth of CAPEX of the historical period (2015-2019).

Regarding the historical values of Cash Flow Statement for capital expenditures, it is possible to notice that the amounts expressed are very stable and constant, and so we considered that this firm is already used to expend regular amounts of capital for this purpose and so both values make sense since the company is continuously investing in emergent markets.

Through this method, it can be observed that for the forecasted period the weight of CAPEX relative to the Total Revenues ranges between 3.23% (2021) and 3.36% (2024), which matches the weight of CAPEX relative to the Total Revenues of the last 3 years (2017-2019), which is of 3.26%.

For depreciation and amortization, given that the historical ratio between both values and CAPEX is stable, we assumed it will grow according to the historical average.

Net Working Capital

The changes in working capital were computed by summing the forecasted values in each year correspondent for changes in Accounts Receivable, Changes in Inventories, Changes in Accounts Payable and changes in other operational or liabilities Doing those computations, it was possible to deduct the net working capital forecasted for the period 2020-2024.

The forecasted values of the main items of the NWC were obtained using the historical ratios of Days Sales Outstanding (DSO) for Accounts Receivables and Days Payable Outstanding (DPO) for the Accounts Payable. For Inventories we only used Days Inventory Outstanding (DIO) ratio for the forecasts of 2023 and 2024. Given the current COVID-19 situation, it's the Adidas will have accumulated a high value of inventories by the end of 2020, and the ratio was not realistic. For this reason, we used the value present in the half year Balance Sheet given by Adidas, as it is the most reliable source. For 2021 and 2022 we assumed a constant growth between 2020 and 2023, when the situation is expected to be more normal.

Debt

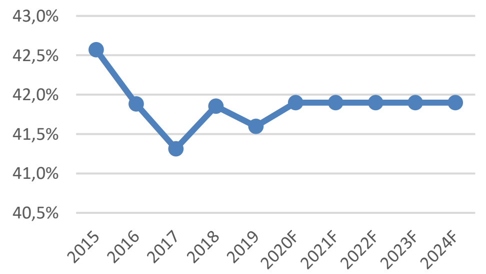
It was assumed that Total Debt was constituted by Short-term borrowings and Long-term borrowings. Due to the crisis caused by the pandemic, we assumed the year 2020 as an anomaly, because Adidas during this year exponentially increased the level of STD, and also emitted 2 eurobonds worth 500 million each. For the remaining years we assumed that the debt level in the short and long term should be relatively stable in relation to the company's record. This way, it was created a line "New Debt" to reflect the need of money in each period, due to the fact Adidas will have two long term bonds expiring in 2023 and 2024.

WACC Assumptions

In order to evaluate the Adidas Group business, the Weighted Average Cost of Capital (WACC) was estimated. Since the group's financial structure includes both debt and equity, the cost of each was calculated separately. The Market Risk Premium was taken from Damodaran's "Equity Risk Premium" of Germany, corresponding to a value of 5,23%.

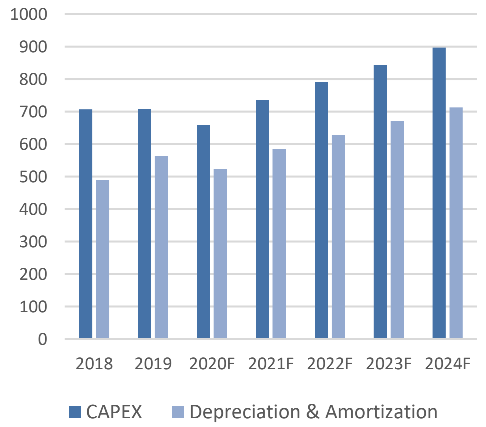
As Adidas is a company with a worldwide scale, we found it appropriate to use a Risk-Free Rate based on all relevant regions of activity. The final figure corresponds to the

Figure 33: Historical and Projected Other Operating Expenses (2015-2024F)



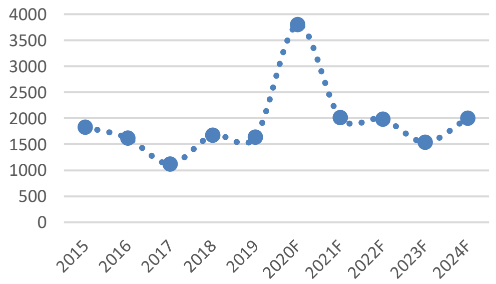
Source: Company information and own estimations

Figure 34: Historical and Projected CAPEX and D&A (2018-2024F) – in millions €



Source: Company information and own estimations

Figure 35: Historical and Projected Debt (2015-2024F) – in millions €



Source: Company information and own

weighted average of the 10 Year Bonds of the geographical regions in which Adidas operates. To arrive at the final value, we divided the estimations into four regions (Europe, Americas, Asia Pacific and Emerging Markets) with five countries each, of which the 10 Year Bond Yield was obtained from each and weighted by the weight of the 2019 Real GDP. After arriving at the risk-free rate of each region, we then weighted it by the annual revenues of each region (FY2019) and obtained the final risk-free rate of 1.71%. it was assumed the average values of the rate between 2015 and 2018.

To calculate the levered beta, it was computed the correlation for the past five years between the stock market prices Adidas AG is inserted, which is the Deutscher Aktienindex (DAX 30), and the company. The resulting beta levered equals to 0.80, meaning that Adidas AG stock is low risk when compared to DAX' stock volatility. To unlever the Beta we applied the formula of $\boldsymbol{\beta L}=\boldsymbol{\beta U} \times(\mathbf{1}+\boldsymbol{D}/\boldsymbol{E}) \times (\mathbf{1}-\boldsymbol{tc})$ and we got the value of 0.78.

To estimate the Cost of Equity, we applied the Capital Asset Pricing Model (CAPM), which used the inputs described above and generated a value of 5,79%.

For the Cost of Debt and performing an analysis of the available financial information about the company's short- and long-term borrowings, it was found that the average cost of debt is 1,5%. To validate this information, I found that the yield to maturity of Adidas' current 2035 Eurobond is 1,54%.

The Tax Rate is the one computed as the historical average between 2015 and 2019.

The Terminal Growth Rate was based on the long-term Real GDP growth projections for the different business regions of Adidas (taken from International Monetary Fund website)

Considering the weight of Debt and Equity in the company's capital structure and the estimated costs, the WACC reached is 5.66%.

Discounted Cash Flow

In consideration of the forecasts detailed in the preceding sections, we have obtained all the details needed for the estimation of the FCF and as a result, the enterprise value and the equity value.

After adding the Present Value of the Discounted Cash Flows and Terminal Value, we achieved an Enterprise Value of €49.866,50 m, which is subtracted by Net Debt and Minor Interests, resulting in an Equity Value of €49.023,5. The Equity Value, split by 195.969.387 shares, resulting in price target of €250,16, with a downsize potential of -9,49%.

Relative Valuation

We calculated a multiples valuation in order to help grasp the market perception of other players in the sporting goods industry compared to the Adidas's value. The companies chosen for this review were the same ones listed earlier in the Peers

Companies, given that they have the same sources of income and hence make sense to compare with.

To determine the price target through the Relative Valuation, we used the market multiples approach relative to 2020F. We selected Nike, Inc, Puma SE, Skechers Inc, and Under Armour inc as Peers Companies, which is detailed in chapter 4. The ratios we considered to the market approach were the EV/EBITDA, EV/ Sales and P/E Ratio.

The peers were used to compute the average for each multiple to obtain the price target for Adidas by using the forward valuation for multiples.

Using P/E ratio, we achieved a price target of 301,23€ for Adidas's fiscal year ending, which represents an upside potential of 8.98%

Using EV/Sales, we achieved a price target of 279,83€ for Adidas's fiscal year ending, which represents an upside potential of 1.24%%

Table 9: Calculation of WACC

Cost of Equity	
Risk free rate	1,71%
Beta Unlevered	0,78
Beta Levered	0,80
Tax	28,98%
Market Risk Premium	5,23%
Country Risk Premium	0,00%
Cost of Equity	**5,79%**
Cost of Debt	
Cost of Debt	1,50%
Cost of debt (1-t)	**1,07%**
WACC	**5,66%**

Source: Author estimations

Table 10: DCF Method Output

Total Disc. FCF 2021F – 2024F	**5 882,1**
Terminal Value	**43 984,4**
Enterprise Value	**49 866,5**
Cash and Cash Equivalents	**2 220,0**
Total Debt	**1 638,0**
Net Debt	**(582,0)**
Non-controlling interests	**261,0**
Equity Value	**49 023,5**
Number of shares outstanding	**195.969.387**
Equity value per share	**€ 250,16**
Downsize Potential	**-9,49%**

Source: Author estimations

Table 11: Price Targets and Upside Potentials – Using Multiples

Relative Valuation		
EV/EBITDA	343,0 €	24,08%
EV/Sales	279,8 €	1,24%
P/E Ratio	301,2 €	8,98%
Average	**308,0 €**	**11,44%**

Source: Author estimations

Using EV/EBITDA, we achieved a price target of 342,96€ for Adidas's fiscal year ending, which represents an upside potential of 24.08%

Considering the price targets obtained with the three different multiples, by calculating a simple average of the three prices I obtain a price target of 308,00€, representing an upside potential of 11,44%. This means that the market is underestimating the value of Adidas, although this is not in line with my DCF estimations.

Dividend Discount Model

The Adidas Group has been paying dividends increasingly over the past few years and plans to continue to do so in the future, and additionally has a regular financial policy, both factors that are consistent with the valuation process. Provided that Adidas has a steady growth and a stable beta over time, we can use the DDM to obtain the company's target price. First, we presumed that the company's payout ratio remained constant over the forecast period, at the same rate as of 2019, with a payout ratio of 39.2%. After obtaining the valuation of the future dividends, we discounted them at the expense of the cost of equity, obtained through the CAPM model, summed up the PV of all dividends and divided it by the total amount of outstanding shares, culminating in a price target of €137.52, reflecting a downside potential of 50,25% and a SELL recommendation.

Thanks to the conservative expectation of the dividend payout ratio, this approach proposes an unsustainable target price. The projected dividends for the forecast period are not adequate to build a viable judgment about the company's price target. In addition, the two methods discussed before possess a stronger basis of assumptions, so we preferred their use in the final price target.

Table 12: Dividend Discount Model Results

Expected Growth Rate	3,0%
Current Annual Dividend	3,85 €
Risk-Free Rate	1,7%
Estimated Market Return	5,2%
Beta	0,78
1 Year Forward Dividend	3,85 €
Discount Rate	5,8%
Dividend Discount Model Fair Value:	**137,52 €**

Source: Author estimations

7. Financial Analysis

While Revenues projections are not disaggregated by region, the growth rates used in them were obtained considering factors of each region. Thus, by 2024 Adidas will be less and less dependent on Europe, with an increasingly expected strong performance (except 2020 in Asia-Pacific and North America, a trend that was already occurring in recent years of activity.

Thus, by 2024 Adidas will be less and less dependent on Europe, with an increasingly high expected growth (except 2020) in revenues in Asia-Pacific and North America, a trend that was already occurring in recent years of activity.

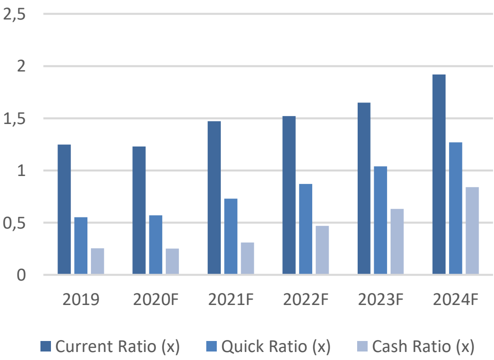
Overall, after the economic recession in 2020 and the high impact this will have on Adidas' revenues, it is expected that 2021 will be a year of recovery and that the company will continue the growth path it was on before the pandemic, achieving a CAGR of 7.1% during 2021F-2024F. This expected growth is due to the high value of the Adidas brand, its growing market share in key markets such as the United States and China, as well as the high growth associated with e-commerce that is expected.

Adidas' EBIT has always been positive, showing sustainable operating profits, and after 2020 is expected reach similar values to the ones reported in FY2018, fueled mainly by the rebound of the revenues. However, for 2020F-20214F EBIT has a -1.8% CAGR, due to the consequences of the current economic downturn that are expected to spread over the next few years. By 2024, Adidas' Net Income is also expected to reach values similar to the ones reported in FY2018.

The main expenses of Adidas are: Cost of Sales (3.2% CAGR) and Other Operating Expenses (2.6% CAGR), which are expected to grow as proportion of revenues. Both expenses represent 50.4% and 41.9% of total revenues, respectively.

Regarding solvency, Adidas is known by being a company that presents a low level of debt, especially when comparing to the average values in the industry. By looking at the Debt-to-Equity Ratio, it is possible to observe that the company keeps a low ratio,

Figure 36: Liquidity Ratios



Source: Author estimations

in FY2019 with a value 0.23x. The company will further reduce its leverage to 0.15x by the end of 2024F, being expected that the levels of Debt remain stable (except for 2020) and the Equity increases through the Retained Earnings. Shortly, Debt weight went from 7,92% in 2019 to 7,41% in 2024.

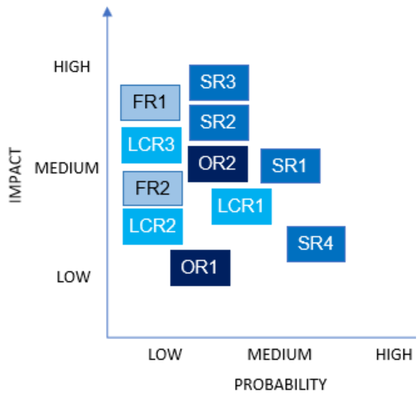
We can also verify that Adidas' efficiency ratios remain stable from 2019 to 2024. This comes from the fact that Adidas is already a highly efficient company recognized for its large and complex supply network, which is expected to continue over the years. The greatest variance during the analyzed period is even in 2020 (81.11 days in inventory in 2019 and 89.50 days in 2020), due to the current COVID-19 pandemic that caused the retention of products in stock for more than usual.

Regarding Adidas' profitability, we can observe that there is a stabilization of all the margin ratios until 2024F: 50% for gross margin, 12% for EBITDA margin, 9% for EBIT margin and 6% for net income margin. This is because during the projections we assumed that the costs of sales and marketing and other operating expenses would maintain the proportions in relation to revenues at a level similar to the historical period analyzed. However, on the other hand, both ROE and ROA decrease between 2019 and 2024, respectively to 12.57% and 6.26%. This is explained by the fact that in FY2019 there was an outstanding Net Income result, with a margin in relation to sales well above the historical average, and by the fact that asset and equity levels increased over the years.

8. Investment Risks

Adidas AG is faced with several risks with a certain associated probability that may have a low or high impact on its performance and financial wealth. A risk- matrix has been created to assess and identify the main risks of the company. The setting up of the matrix was based on three main risk areas: Operational risk, Economic and Market risk, and Political and Regulatory risk.

Figure 37: Risk Matrix



Source: Author and Company information

Strategic Risks

Competition Risks | SR1

Changes in the competitive environment and retail environment could have an effect on the revenue of Adidas, especially in the mid to long term. Trade relationships between rivals and retailers, a growth in retailers' own private label businesses and intense rivalry for customers, manufacturing capability and marketing collaborations between well-established industry leaders and new competitors pose a major challenge to Adidas. This may lead to negative competitive conduct, such as prolonged cycles of discounting in the industry or intense tendering for promotion partnerships. Increasingly fierce tactics may also contribute to a rise in advertisement costs and reductions in market share, thereby weakening the viability and market position of the business.

Consumer demand Risks | SR2

Adidas' reputation relies to a large degree on its ability to constantly produce modern, creative footwear and apparel goods. Consumer demand trends can be abrupt and unpredictable, particularly with regard to the more fashion-related aspect of its business. Adidas thus face the threat of a short-term loss of sales in situations where we are unable to foresee market demand or respond quickly to changes.

Macroeconomic and Sociopolitical Risks | SR3

Success in the athletic goods industry depends heavily on consumer spending and trustworthiness. Recessions, financial market uncertainties, currency exchange rate fluctuations and socio-political factors such as geopolitical tensions, changes in government, political conflicts, pandemics, nationalization, especially in countries where Adidas is heavily represented, can therefore have a negative impact on business activities and the FY performance. The COVID-19 pandemic today is a strong example of this type of risk, since with the virus propagation and respective government measures to prevent it, consumer activity has declined abruptly worldwide, hitting the sales of many specialized retail companies such as Adidas.

Distribution strategy Risks | SR4

The failure to effectively adapt logistics strategies for an increasing retail industry, with increasing replacement of physical retail stores by e-commerce platforms and consumers requiring smooth buying experience across diverse distribution networks, could result in revenue and profit losses.

Operational Risks

Inventory Risks | OR1

At the point of production scheduling, Adidas AG is vulnerable to inventories threats due to the misappropriation of customer demand. Overestimating demand may result in insufficient usage of suppliers' factories, lead to overproduction and trigger excess inventories for both the manufacturer and the customers. This may have implications such as poor financial results and less liquidity.

IT and cyber security risks | OR2

Extortion, leakage, corruption or lack of availability of information and systems of important clients, staff and goods may lead to reputational harm, regulatory fines or the failure to conduct essential business operations. Key business operations, including retail marketing, order control, inventory management, invoice collection, customer service and financial statements, all rely on IT systems. Therefore, major outages, application vulnerabilities or cyber security risks to our networks or those of our business partners may lead to significant business delays or effects on business-critical data.

Legal and Compliance Risks

Risks related to tax and customs regulations | LCR1

The company's corporate activities globally are influenced by various customs and tax rules and regulations, as well as improvements in those laws and regulations. Failure to comply with commodity import, intercompany transaction or income tax regulations may result in significant financial fines and increased costs, as well as unfavorable media attention and, ultimately, reputational harm.

Data privacy risks | LCR2

Substantial fines can result from non-compliance with laws and regulations relating to data security and privacy, such as the EU General Data Protection Regulation. Furthermore, disclosure of non-compliance with data security and privacy legislation could inflict substantial reputational harm and contribute to a lack of customer interest in our products.

Fraud and corruption risks | LCR3

Adidas also faces the possibility of breaking laws and norms that govern acceptable and ethical corporate conduct by top management representatives and other employees. This covers threats of bribery, financial misrepresentation or tampering, anti-competitive market activities, coercion, corruption, sexism and sexual abuse.

Financial Risks

Currency Risks | FR1

Currency risks are a direct consequence of a company's multi-currency cash flows, in particular the discrepancy of the currencies used to buy its goods against the denominations of its revenues. In addition, conversion impacts from the transfer of non-euro-denominated earnings into the operating currency of the organization could have a significant negative impact on financial results.

Credit risks | FR2

Adidas is vulnerable to credit risks resulting from its operational practices and some funding operations. Credit losses occur if a financial instrument's buyers or other counterparties refuse to satisfy its contractual obligations.

Sensitivity Analysis

Adidas is susceptible to several risks and, therefore, a sensitivity analysis was performed to observe how Adidas's stock price would behave when certain variables changed. Such risks involved key elements of the DCF valuation model and a mix of adjustments for both the Terminal Growth Rate and the WACC rate.

The different combinations of Terminal Growth Rate and WACC and respective impact in the price target of Adidas are presented in the table below. Through the assessment of the results, it can be inferred that the company is very sensible to a decrease in the terminal Growth Rate while WACC rate increases. This results in a negative effect on the company's price target due to the massive weight and influence these variables have on the Terminal Value. Though if the growth rate rises while the WACC declines, the reverse result would arise, leading to an increase in the final price target of Adidas.Growth Rate increases while WACC goes down, the opposite effect occurs, leading to an increase in Adidas' final price target.

Table 14: Risk to Price Target

		WACC									
		4,46%	**4,76%**	**5,06%**	**5,36%**	**5,66%**	**5,96%**	**6,26%**	**6,56%**	**6,86%**	**7,16%**
Terminal Growth Rate	**1,49%**	234,65	213,17	195,30	180,20	167,28	156,08	146,29	137,65	129,98	123,12
	1,79%	258,74	232,67	211,39	193,68	178,71	165,89	154,79	145,09	136,53	128,92
	2,09%	288,94	256,56	230,72	209,62	192,06	177,23	164,52	153,52	143,90	135,42
	2,39%	327,90	286,50	254,40	228,79	207,87	190,47	175,76	163,17	152,27	142,73
	2,69%	380,10	325,13	284,08	252,27	226,88	206,15	188,90	174,32	161,83	151,02
	2,99%	453,64	376,88	322,39	281,70	**250,16**	224,99	204,44	187,34	172,89	160,51
	3,29%	564,98	449,79	373,69	319,67	279,34	248,07	223,12	202,75	185,80	171,47
	3,59%	753,37	560,18	445,98	370,54	316,99	277,01	246,01	221,28	201,08	184,27
	3,89%	1141,06	746,95	555,43	442,21	367,43	314,34	274,70	243,97	219,45	199,43
	4,19%	2399,52	1131,32	740,60	550,73	438,49	364,35	311,72	272,42	241,96	217,65

Source: Author analysis

Table 13: Recommendation system for medium risk companies

<-10%	<248,76	Sell
>-10% & <10%	**>248,76 & <304,04**	**Reduce**
>10% & <20%	>304,04 & <331,68	Hold / Neutral
>20%	>331,68	Buy

Source: Author analysis and Recommendation system

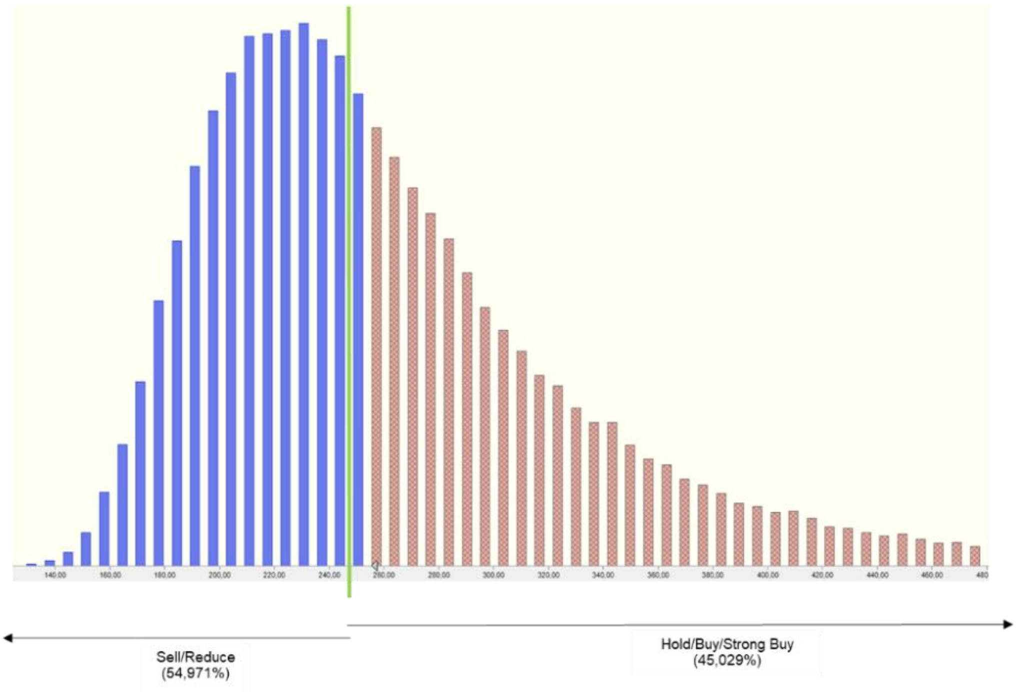
Monte Carlo Simulation

We performed a Monte Carlo simulation using the software Crystal Ball to evaluate the way the price target reacts to changes in different inputs. The inputs chosen were the WACC and terminal growth rate, and the risk-free rate, given the huge impact each one has in the final price target.

After completing the simulation with 100000 trials, the program indicated a mean price target of €264,79, which supports the REDUCE recommendation presented in the previous chapters. It is also relatively close to the price target reached in the DCF Method (€250,16) and to the average price target of the DCF method and the Multiples Valuation (€279,08).

Additionally, the results show that the Kurtosis value is 7.07, which is higher than the Kurtosis value of a normal distribution, 3, and also an asymmetry of 1.66.

Figure 38: Monte Carlo Simulation



Source: Author and Crystal Ball software

Appendices

Appendix 1: Statement of Financial Position

€ in millions	2015	2016	2017	2018	2019	2020F	2021F	2022F	2023F	2024F
Assets										
Cash and cash equivalents	1365	1510	1598	2629	2220	2271	2444	4025	5675	7311
Short-term financial assets	5	5	5	6	292	55	61	65	69	72
Accounts receivable	2049	2200	2315	2418	2625	2317	2602	2767	2915	3048
Other current financial assets	367	729	393	542	544	517	581	618	651	680
Inventories	3113	3763	3692	3445	4085	5213	4992	4771	4549	4757
Income tax receivables	97	98	71	48	94	79	79	79	79	79
Other current assets	489	580	498	725	1076	659	740	787	829	867
Assets classified as held for sale	12	0	72	0	0	0	0	0	0	0
Total current assets	7497	8886	8645	9813	10934	11112	11499	13112	14767	**16814**
Property, plant and equipment	1638	1915	2000	2237	2380	2473	2573	2675	2779	2884
Right-of-use assets	0	0	0	0	2931	2931	2931	2931	2931	2931
Goodwill	1392	1412	1220	1245	1257	1257	1257	1257	1257	1257
Trademarks and other intangible assets	1816	1847	960	1040	1164	1206	1257	1316	1385	1464
Long-term financial assets	140	194	236	276	367	236	265	281	296	310
Other non-current financial assets	99	96	219	256	450	212	238	253	266	278
Deferred tax assets	637	732	630	651	1093	743	834	887	934	977
Other non-current assets	124	94	108	94	103	103	103	103	103	103
Total non-current assets	5846	6290	5374	5799	9746	9160	9456	9703	9952	10204
Total assets	**13343**	**15176**	**14019**	**15612**	**20680**	**20272**	**20956**	**22815**	**24718**	**27018**
Liabilities and equity										
Short-term borrowings	366	636	137	66	43	1815	29	513	567	67
Accounts payable	2024	2496	1975	2300	2703	2301	2583	2747	2894	3026
Other current financial liabilities	143	201	362	186	733	308	346	368	387	405
Income taxes	359	402	424	268	235	202	227	241	254	265
Other current provisions	456	573	741	1232	618	618	618	618	618	618
Current accrued liabilities	1684	2023	2180	2305	1446	1938	2175	2314	2437	2548
Other current liabilities	331	434	473	477	2437	2437	2437	2437	2437	2437
Liabilities classified as held for sale	0	0	0	0	538	0	0	0	0	0
Total current liabilities	5364	6765	6291	6834	8754	9000	7797	8619	8976	8749
Long-term borrowings	1463	982	983	1609	1595	1985	1985	1472	972	1934
Non-current lease liabilities	0	0	0	0	2399	2399	2399	2399	2399	2399
Other non-current financial liabilities	18	22	22	103	92	48	54	58	61	64
Pensions and similar obligations	273	355	298	246	229	229	229	229	229	229
Deferred tax liabilities	368	387	190	241	280	302	339	361	380	398
Other non-current provisions	50	44	80	128	257	257	257	257	257	257
Non-current accrued liabilities	120	120	85	19	9	9	9	9	9	9
Other non-current liabilities	40	46	53	68	7	7	7	7	7	7
Total non-current liabilities	2332	1957	1711	2414	4868	4751	4794	4306	3828	4810
Total liabilities	**7696**	**8721**	**8002**	**9248**	**13622**	**13751**	**12590**	**12925**	**12804**	**13559**
Share capital	200	201	204	199	196	196	196	196	196	196
Reserves	592	749	-29	123	45	45	45	45	45	45
Retained earnings	4874	5521	5858	6054	6555	6019	7863	9388	11412	12957
Shareholders' equity	5666	6472	6032	6376	6796	6260	8104	9629	11653	13198
Non-controlling interests	-18	-17	-15	-13	261	261	261	261	261	261
Total equity	**5648**	**5980**	**6017**	**6363**	**7058**	**6521**	**8365**	**9890**	**11914**	**13459**
Total liabilities and equity	**13343**	**15176**	**14019**	**15612**	**20680**	**20272**	**20956**	**22815**	**24718**	**27018**

Appendix 2: Income Statement

€ in millions	2015	2016	2017	2018	2019	2020F	2021F	2022F	2023F	2024F
Net sales	**16915**	**18483**	**21218**	**21915**	**23640**	**20304**	**22794**	**24243**	**25536**	**26702**
Cost of sales	8748	9383	10514	10552	11347	10078	11314	12034	12675	13254
Gross profit	**8167**	**9100**	**10704**	**11363**	**12293**	**10226**	**11480**	**12210**	**12861**	**13448**
(% of net sales)	48,3%	49,2%	50,4%	51,9%	52.0%	50,4%	50,4%	50,4%	50,4%	50,4%
Royalty and commission income	119	105	115	129	154	117	117	117	117	117
Other operating income	8	119	17	48	56	48	48	48	48	48
Other Operating Expenses	7201	7741	8766	9172	9843	8509	9552	10159	10701	11190
(% of net sales)	42,6%	41,9%	41,3%	41,9%	41.6%	41,9%	41,9%	41,9%	41,9%	41,9%
EBITDA	**1486**	**1980**	**2554**	**2858**	**3874**	**2406**	**2678**	**2844**	**2996**	**3137**
(% of net sales)	8,8%	10,7%	12,0%	13,0%	16,4%	11,9%	11,7%	11,7%	11,7%	11,7%
Depreciation and Amortization (D&A)	393	397	484	490	1214	524	585	629	671	713
Operating Profit (Adj. EBIT)	**1093**	**1583**	**2070**	**2368**	**2660**	**1882**	**2093**	**2216**	**2325**	**2424**
(% of net sales)	6,5%	8,6%	9,8%	10,8%	11.3%	9,3%	9,2%	9,1%	9,1%	9,1%
Financial income	46	28	46	57	64	62	67	71	74	76
Financial expenses	67	74	93	47	166	224	119	117	91	118
Income before taxes (Adj. PBT)	**1072**	**1537**	**2023**	**2378**	**2558**	**1720**	**2041**	**2169**	**2308**	**2381**
(% of net sales)	6,3%	8,3%	9,5%	10,9%	10.8%	8,5%	9,0%	8,9%	9,0%	8,9%
Income taxes	353	454	668	669	640	499	592	629	669	690
(% of income before taxes)	32,9%	29,5%	33,0%	28,1%	25.0%	29,0%	29,0%	29,0%	29,0%	29,0%
Net income from continuing operations	**719**	**1083**	**1355**	**1709**	**1918**	**1222**	**1450**	**1541**	**1639**	**1691**
(% of net sales)	4,3%	5,9%	6,4%	7,8%	8.1%	6,0%	6,4%	6,4%	6,4%	6,3%
Losses from discontinued operations	46	62	254	5	59	0	0	0	0	0
Net income	**673**	**1021**	**1101**	**1704**	**1977**	**1222**	**1450**	**1541**	**1639**	**1691**
(% of net sales)	4,0%	5,5%	5,2%	7,8%	8.4%	6,0%	6,4%	6,4%	6,4%	6,3%
Net income attrib. to shareholders	**667**	**1019**	**1098**	**1701**	**1976**	**1220**	**1447**	**1538**	**1636**	**1688**
(% of net sales)	3,9%	5,5%	5,2%	7,8%	8.4%	6,0%	6,3%	6,3%	6,4%	6,3%
Net income attributable to NCI	**6**	**2**	**3**	**3**	**2**	**2**	**3**	**3**	**3**	**3**

Appendix 3: Cash Flow Statement

€ in millions	2015	2016	2017	2018	2019	2020F	2021F	2022F	2023F	2024F
Operating activities:										
Income before taxes	**1 039**	**1444**	**2023**	**2378**	**2558**	**1720**	**2041**	**2169**	**2308**	**2381**
Adjustments for:										
Depreciation, amortization and impairment losses	393	397	484	490	1214	524	585	629	671	713
Reversals of impairment losses	-1	-2	-1	-3	-8	0	0	0	0	0
Unrealized foreign exchange gains, net	36	-7	-75	-10	-1	-1	-1	-1	-1	-1
Interest income	-20	-21	-25	-24	-50	-62	-67	-71	-74	-76
Interest expense	65	70	62	42	160	224	119	117	91	118
Losses on sale of property, plant and equipment and intangible assets, net	15	-21	17	9	11	0	0	0	0	0
Other non-cash expenses	-1	0	3	17	-12	0	0	0	0	0
Payment for external funding of pension obligations (CTA)	–	–	-30,00	-90,00	-105	0	0	0	0	0
Operating profit before working capital changes	**1527**	**1 859**	**2 534**	**2 808**	**3767**	**2 405**	**2 677**	**2 843**	**2 995**	**3 136**
Increase in receivables and other assets	-183	-411	-477	-209	-694	-739	365	212	190	171
Decrease/(increase) in inventories	-639	-621	-216	180	-505	-1128	221	221	221	-208
Increase in accounts payable and other liabilities	823	1006	422	741	951	90	520	302	270	243
Cash generated from operations before interest and taxes	**1527**	**1834**	**2263**	**3520**	**3519**	**628**	**3783**	**3579**	**3676**	**3342**
Interest paid	-55	-46	-65	-40	-156	-224	-119	-117	-91	-118
Income taxes paid	-386	-439	-556	-815	-692	-499	-592	-629	-669	-690
Net cash generated from operating activities – continuing operations	**1086**	**1348**	**1641**	**2666**	**2828**	**-95**	**3073**	**2833**	**2916**	**2534**
Net cash (used in)/generated from operating activities – discontinued operations	3	-1	6	-20	-9	0	0	0	0	0
Net cash generated from operating activities	**1090**	**1348**	**1648**	**2646**	**2819**	**-95**	**3073**	**2833**	**2916**	**2534**
Investing activities:										
Purchase of trademarks and other intangible assets	-49	-65	-74	-96	-110	-107	-123	-137	-152	-167
Proceeds from sale of trademarks and other intangible assets	0	0	0	2	0	0	0	0	0	0
Purchase of property, plant and equipment	-464	-586	-678	-611	-598	-552	-612	-653	-692	-730
Proceeds from sale of property, plant and equipment	6	5	2	13	12	0	0	0	0	0
Proceeds from sale of assets held for sale	0	14	0	71	–	0	0	0	0	0
Proceeds from sale of a disposal group	0	29	6	18	8	0	0	0	0	0
Acquisition of subsidiaries and other business units	-214	0	0	0	54	0	0	0	0	0
Proceeds from disposal of discontinued operations	164	0	174	0	20	0	0	0	0	0
Proceeds from/(Purchase of) sale of short-term financial assets	0	0	0	0	-284	-264	70	41	36	33
Proceeds from/(Purchase of) sale of other long-term assets	-48	-33	-132	-56	-80	-370	55	32	28	26
Interest received	20	21	25	24	50	62	67	71	74	76
Net cash used in investing activities – continuing operations	**-584**	**-614**	**-676**	**-636**	**-925**	**-1231**	**-543**	**-647**	**-706**	**-763**
Net cash used in investing activities – discontinued operations	-6	0	-4	–	–	0	0	0	0	0
Net cash used in investing activities	**-591**	**-614**	**-680**	**-636**	**-925**	**-1231**	**-543**	**-647**	**-706**	**-763**
Financing activities:										
Proceeds from long-term borrowings	0	0	0	141	–	0	29	29	67	67
Repayments of long-term borrowings	-10	0	0	0	–	0	0	0	0	0
Proceeds from issuance of a convertible bond	0	0	0	518	–	0	0	0	0	0
Repayments of convertible bonds	0	0	0	-35	–	0	0	0	-484	0
Proceeds from issue of eurobonds	0	0	0	0	0	1000	0	0	500	1000
Repayment of eurobond	0	0	0	0	0	0	-598	0	0	-500
Repayments of finance lease obligations	-2	-3	-2	-2	-597	0	0	0	0	0
Dividend paid to shareholders of adidas AG	-303	-320	-405	-528	-664	-752	-567	-603	-641	-662
Acquisition of non-controlling interests	0	-24	0	0	0	0	0	0	0	0
Dividend paid to non-controlling interest shareholders	-6	2	-1	-1	-2	-2	-3	-3	-3	-3
Repurchase of treasury shares	-301	-218	-85	-1	-809	0	0	0	0	0
Repurchase of treasury shares due to share-based payments	-22	0	-15	-22	-28	0	0	0	0	0
Proceeds from reissuance of treasury shares	19	0	13	19	24	0	0	0	0	0
Proceeds from short-term borrowings	35	150	0	9	–	1174	0	0	0	0
Repayments of short-term borrowings	-103	-138	-273	-49	-42	-43	-1217	-29	0	-38
Net cash used in financing activities – continuing operations	**-691**	**-553**	**-769**	**-951**	**-2273**	**1377**	**-2356**	**-606**	**-561**	**-136**
Net cash used in financing activities – discontinued operations	0	0	0	0	–	0	0	0	0	0
Net cash used in financing activities	**-691**	**-553**	**-769**	**-951**	**-2273**	**1377**	**-2356**	**-606**	**-561**	**-136**
Effect of exchange rates on cash	**-126**	**-35**	**-111**	**-29**	**-30**	**0**	**0**	**0**	**0**	**0**
Increase of cash and cash equivalents	-318	145	88	1031	-410	51	173	1581	1650	1636
Cash and cash equivalents at beginning of year	1683	1365	1510	1598	2629	2220	2271	2444	4025	5675
Cash and cash equivalents at end of period	**1365**	**1510**	**1598**	**2629**	**2220**	**2271**	**2444**	**4025**	**5675**	**7311**

Appendix 4: Key Financial Ratios

Key Financial Ratios	2015	2016	2017	2018	2019	2020F	2021F	2022F	2023F	2024F
Liquidity Ratios										
Current Ratio (x)	1,398	1,314	1,374	1,436	1,249	1,23	1,47	1,52	1,65	1,92
Quick Ratio (x)	0,706	0,657	0,685	0,819	0,553	0,57	0,73	0,87	1,04	1,27
Cash Ratio (x)	0,254	0,223	0,254	0,385	0,254	0,25	0,31	0,47	0,63	0,84
Efficiency Ratios										
Total Assets Turnover (x)	1,27	1,22	1,51	1,40	1,14	1,00	1,09	1,06	1,03	0,99
Accounts Receivable Turnover (x)	8,25	8,70	9,40	9,26	9,38	8,22	9,27	9,03	8,99	8,96
Collection Period (days)	44,22	41,96	38,84	39,41	38,93	44,42	39,38	40,41	40,60	40,75
Inventory Turnover (x)	2,81	4,42	4,66	4,46	4,50	4,08	4,60	4,48	4,46	4,45
Days in Inventory (days)	129,89	82,66	78,38	81,86	81,11	89,50	79,34	81,42	81,80	82,10
Payables Turnover (x)	4,32	4,15	4,70	4,94	4,54	4,03	4,63	4,52	4,49	4,48
Payables Period (days)	84,47	87,92	77,60	73,94	80,47	90,61	78,77	80,84	81,22	81,51
Operating Cycle (days)	174,11	124,62	117,21	121,27	120,04	133,92	118,73	121,84	122,41	122,85
Cash Cycle (days)	89,64	36,69	39,61	47,34	39,58	43,31	39,95	41,00	41,19	41,34
Profitability Ratios										
Gross Profit Margin (%)	48,28%	49,23%	50,45%	51,85%	52,00%	50,36%	50,36%	50,36%	50,36%	50,36%
EBITDA Margin (%)	8,79%	10,71%	12,04%	13,04%	16,39%	11,85%	11,75%	11,73%	11,73%	11,75%
EBIT Margin (%)	6,46%	8,56%	9,76%	10,81%	11,25%	9,27%	9,18%	9,14%	9,10%	9,08%
Net Income Margin (%)	3,98%	5,52%	5,19%	7,78%	8,36%	6,02%	6,36%	6,35%	6,42%	6,33%
ROA (%)	5,04%	6,73%	7,85%	10,91%	9,56%	6,03%	6,92%	6,75%	6,63%	6,26%
ROE (%)	11,92%	17,07%	18,30%	26,78%	28,01%	18,74%	17,33%	15,58%	13,76%	12,57%
DPS	1,45	1,53	1,94	2,63	3,29	3,81	2,87	3,05	3,25	3,35
EPS (X)	3,19	4,87	5,25	8,49	9,70	6,17	7,32	7,78	8,28	8,54
Solvency Ratios										
Short and Long-Term Debt Ratio (%)	13,71%	10,66%	7,99%	10,73%	7,92%	18,75%	9,61%	8,70%	6,23%	7,41%
Long-term Debt Ratio (%)	10,97%	6,47%	7,01%	10,31%	7,71%	9,79%	9,47%	6,45%	3,93%	7,16%
Debt to Equity Ratio (x)	0,32	0,27	0,19	0,26	0,23	0,58	0,24	0,20	0,13	0,15
Equity Multiplier (x)	2,36	2,34	2,32	2,45	3,04	3,24	2,59	2,37	2,12	2,05
Debt to EBITDA	1,23	0,82	0,44	0,59	0,42	1,58	0,75	0,70	0,51	0,64
Interest Coverage Ratio (x)	16,31	21,39	22,26	50,38	16,02	8,40	17,63	18,93	25,62	20,54
Capital Structure										
Equity Weight	42,33%	39,40%	42,92%	40,76%	34,13%	32,17%	39,92%	43,35%	48,20%	49,82%
Debt Weight	13,71%	10,66%	7,99%	10,73%	7,92%	18,75%	9,61%	8,70%	6,23%	7,41%
Payout Ratio	45,43%	31,40%	36,89%	31,04%	33,60%	61,66%	39,20%	39,20%	39,20%	39,20%

Appendix 5: Financial Statements Assumptions

- **Revenues Forecast**

1. Real GDP forecasts weighted by region sales

Regions	2020	2021	2022	2023	2024
Europe	-7,20%	4,70%	3,10%	2,40%	2,00%
North America	-4,90%	3,30%	2,90%	2,30%	1,90%
Latin America	-5,20%	3,40%	2,76%	2,12%	1,48%
Russia CIS	-4,10%	2,80%	2,30%	2,10%	2,00%
Emerging Markets	-4,00%	3,70%	2,76%	1,82%	0,88%
Asia Pacific	-2,30%	6,70%	5,40%	5,30%	5,10%
Other	-4,40%	5,20%	4,20%	3,80%	3,60%
Weighted growth	**-4,54%**	**4,91%**	**3,85%**	**3,42%**	**3,06%**

2. Bloomberg Estimations – Mean of 36 institutions obtained from the Bloomberg Terminal

Net sales (€ Million)	g(2020)	2020	g(2021)	2021	g(2022)	2022	g(2023)	2023	g(2024)	2024
Total (soma)	- 5,80%	19904	17,52%	23392	7,85%	25227	8,46%	27362	8,89%	29796

3. Projected growth of Sports and Outdoor Market

(€ Billion)	2020	2021	2022	2023	2024
Sports&Outdoor Market	140,12	152,83	166,70	181,82	198,32
Growth	**9,073%**	**9,073%**	**9,073%**	**9,073%**	**9,073%**

Weight of the 3 different sources	2020	2021	2022	2023	2024
Bloomberg	85,0%	55,0%	30,0%	10,0%	0,0%
Market	0,0%	10,0%	25,0%	25,0%	25,0%
GDP	15,0%	35,0%	45,0%	65,0%	75,0%

Final Projections	2020	2021	2022	2023	2024
Bloomberg	-15,804%	17,522%	7,846%	8,462%	8,893%
Market	9,073%	9,073%	9,073%	9,073%	9,073%
GDP	-4,540%	4,912%	3,853%	3,416%	3,063%
Weighted Average	**-14,114%**	**12,263%**	**6,356%**	**5,335%**	**4,565%**
Revenues (€ Millions)	**20304,28**	**22794,28**	**24243,11**	**25536,48**	**26702,29**

- **Balance Sheet Assumptions**

€ in millions	2020F	2021F	2022F	2023F	2024F	Assumptions
Cash and cash equivalents	2271	2444	4025	5675	7311	From the Cash Flow Statement
Short-term financial assets	55	61	65	69	72	Based on a 5-year historical average as % of Revenues
Accounts receivable	2317	2602	2767	2915	3048	Based on a 5-year historical average as a % of Net Sales
Other current financial assets	517	581	618	651	680	Based on a 5-year historical average as % of Revenues
Inventories	5213	4992	4771	4549	4757	For 2020 is assumed the value of this item on the 2020 half-year report from Adidas. From 2021 until 2024, based on a 5-year historical average as a % of Net Sales
Income tax receivables	79	79	79	79	79	Equal to the nominal value of 2019
Other current assets	659	740	787	829	867	Based on a 5-year historical average as % of Revenues
Assets classified as held for sale	0	0	0	0	0	Equal to the nominal value of 2019
Property, plant and equipment	2473	2573	2675	2779	2884	Detailed in Appendix 11. Based on the 5-year average growth of "Purchase of property, plant and equipment" and the forecasted revenue growth for each year until 2024
Right-of-use assets	2931	2931	2931	2931	2931	Equal to the nominal value of 2019
Goodwill	1257	1257	1257	1257	1257	Equal to the nominal value of 2019
Trademarks and other intangible assets	1206	1257	1316	1385	1464	Detailed in Appendix 11. Based on the 5-year average growth of "Purchase of trademarks and other intangible assets" and the forecasted revenue growth for each year until 2024
Long-term financial assets	236	265	281	296	310	Based on a 5-year historical average as % of Revenues
Other non-current financial assets	212	238	253	266	278	Based on a 5-year historical average as % of Revenues
Deferred tax assets	743	834	887	934	977	Based on a 5-year historical average as % of Revenues
Other non-current assets	103	103	103	103	103	Equal to the nominal value of 2019
Short-term borrowings	1815	29	513	567	67	Detailed in Appendix 11
Accounts payable	2301	2583	2747	2894	3026	Based on a 5-year historical average as a % of COGS
Other current financial liabilities	308	346	368	387	405	Based on a 5-year historical average as % of Revenues
Income taxes	202	227	241	254	265	Based on a 5-year historical average growth
Other current provisions	618	618	618	618	618	Equal to the nominal value of 2019
Current accrued liabilities	1938	2175	2314	2437	2548	Based on a 5-year historical average as a % of COGS
Other current liabilities	2437	2437	2437	2437	2437	Equal to the nominal value of 2019
Liabilities classified as held for sale	0	0	0	0	0	Assumed zero until the end of the forecasting period
Long-term borrowings	1985	1985	1472	972	1934	Detailed in Appendix 11
Non-current lease liabilities	2399	2399	2399	2399	2399	Equal to the nominal value of 2019
Other non-current financial liabilities	48	54	58	61	64	Based on a 5-year historical average as % of Revenues
Pensions and similar obligations	229	229	229	229	229	Equal to the nominal value of 2019
Deferred tax liabilities	302	339	361	380	398	Based on a 5-year historical average as % of Revenues
Other non-current provisions	257	257	257	257	257	Equal to the nominal value of 2019
Non-current accrued liabilities	9	9	9	9	9	Equal to the nominal value of 2019
Other non-current liabilities	7	7	7	7	7	Equal to the nominal value of 2019
Share capital	196	196	196	196	196	Equal to the nominal value of 2019
Reserves	45	45	45	45	45	Equal to the nominal value of 2019
Retained earnings	6019	7863	9388	11412	12957	From the other statements
Non-controlling interests	261	261	261	261	261	Equal to the nominal value of 2019

- **Income Statement Assumptions**

€ in millions	2020F	2021F	2022F	2023F	2024F	Assumptions
Net sales	**20304**	**22794**	**24243**	**25536**	**26702**	Detailed before in this Appendix
Cost of sales	49,6%	49,6%	49,6%	49,6%	49,6%	5-year average
Gross margin	50,4%	50,4%	50,4%	50,4%	50,4%	100% - Cost of sales
Royalty and commission income	117	117	117	117	117	Equal to the nominal value of 2019
Other operating income	48	48	48	48	48	Equal to the nominal value of 2019
Other Operating Expenses	41,9%	41,9%	41,9%	41,9%	41,9%	5-year average
Depreciation & Amortization	524	585	629	671	713	Detailed in Appendix 10. Ratio D&A/CAPEX equal to 2019 until 2024
Financial income	62	67	71	74	76	Average interest (Financial Income / Total Financial Assets) of the last 5 years
Financial expenses	224	119	117	91	118	Average cost of debt of the last 5 years. (Financial expense / Total Debt)
Income taxes	29,0%	29,0%	29,0%	29,0%	29,0%	National Corporate Tax (25%) + Average growth of the last 5 years

Appendix 6: WACC Assumptions

Cost of Equity		
Risk free rate	1,71%	Based on weighted average of 10Y Bonds of the main regions of activity
Beta Unlevered	0,78	Correlation for the past 5 years between the stock market prices and the company
Beta Levered	0,80	Unlevered Beta formula
Tax	28,98%	Own estimation - based on the historical average
Market Risk Premium	5,23%	Taken from Damodaran
Country Risk Premium	0,00%	Taken from Damodaran
Cost of Equity	**5,79%**	CAPM Model

Cost of Debt		
Cost of Debt	1,50%	Analysis of the available financial information about the company's short- and long-term borrowings
Cost of debt (1-t)	**1,07%**	

WACC	**5,66%**

$$WACC = \frac{E}{E+D} * R_E + \frac{D}{E+D} * R_D * (1-T)$$

Appendix 7: Risk Free-Rate

GDP, Default Spread and Risk Free for biggest 5 countries within each business area	GDP 2019 (billion USD)	Weight (%)	10-Year Bond Yield (%)	Default Spread (%)	Default Adjusted Risk Free Rate
Europe					**-0,09%**
France	2716	21,24%	-0,33%	0,00%	-0,33%
UK	2827	22,12%	0,17%	0,00%	0,17%
Italy	2001	15,65%	0,73%	0,00%	0,73%
Germany	3846	30,08%	-0,63%	0,00%	-0,63%
Spain	1394	10,91%	0,15%	0,00%	0,15%
Americas					**2,05%**
USA	21428	80,22%	0,60%	0,00%	0,60%
Canada	1736	6,50%	0,77%	0,00%	0,77%
Mexico	1258	4,71%	5,78%	0,00%	5,78%
Brazil	1840	6,89%	7,24%	4,45%	2,79%
Argentina	450	1,68%	80,21%	17,79%	62,41%
Asia Pacific					**2,25%**
China	14343	56,61%	3,08%	0,00%	3,08%
Japan	5082	20,06%	0,00%	0,00%	0,00%
India	2875	11,35%	5,89%	2,82%	3,07%
South Korea	1642	6,48%	1,64%	0,00%	1,64%
Australia	1393	5,50%	1,00%	0,00%	1,00%
Emerging Markets					**5,97%**
Saudi Arabia	793	34,23%	2,86%	0,00%	2,86%
Nigeria	448	19,34%	4,34%	0,00%	4,34%
United Arab Emirates	421	18,18%	4,66%	0,00%	4,66%
South Africa	351	15,17%	8,85%	0,00%	8,85%
Egypt, Arab Rep.	303	13,09%	15,00%	0,00%	15,00%

Business Areas	Rf %	Sales FY2019	Weight (%)
Europe	-0,09%	6583,15	29,24%
Americas	2,05%	6762,415	30,04%
Asia Pacific	2,25%	7926,51	35,21%
Emerging Markets	5,97%	1241,24	5,51%
Risk Free Rate	1,71%		

Appendix 8: Discounted Cash Flow Analysis

€ Millions	2018	2019	2019	2020F	2021F	2022F	2023F	2024F
EBIT	**2 070,0**	**2 368,0**	**2 660,0**	**1 882,4**	**2 093,0**	**2 215,5**	**2 324,9**	**2 423,5**
Tax 28,98%				*545,5*	*606,5*	*642,1*	*673,8*	*702,3*
EBIT(1-t)	**1 355,0**	**1 709,0**	**1 918,0**	**1 336,9**	**1 486,4**	**1 573,5**	**1 651,2**	**1 721,2**
Changes in NWC	456	(445)	(113)	91	(413)	(333)	(321)	118
Capex	752	707	708	659	735	790	844	897
D&A	484	490	563	524	585	629	671	713
Total Free Cash Flow	**631,3**	**1 937,0**	**1 886,0**	**1 111,0**	**1 748,8**	**1 744,4**	**1 799,1**	**1 419,6**
t					1	2	3	4
Discounted FCF					**1 566,5**	**1 478,9**	**1 443,6**	**1 078,1**

Total Disc. FCF 2021F – 2024F	**5 882,1**
Terminal Value	**43 984,4**
Enterprise Value	**49 866,5**
Cash and Cash Equivalents	**2 220,0**
Total Debt	**1 638,0**
Net Debt	**(582,0)**
Non-controlling interests	**261,0**
Equity Value	**49 023,5**
Number of shares outstanding	**195.969.387**
Equity value per share	**€ 250,16**
Potential	**-9,49%**

Terminal Value	
Inputs:	
2024 FCF	1419,6
g	2,99%
WACC	5,66%

Terminal Value on 2024	54 817,1
Terminal Value Discounted	**41 628,9**

Appendix 9: Net Working Capital

Working Capital Schedule	2015	2016	2017	2018	2019	2020F	2021F	2022F	2023F	2024F
Accounts Receivable	2 049	2 200	2 315	2 418	2 625	2 317	2 602	2 767	2 915	3 048
Other current assets	489	580	498	725	1 076	659	740	787	829	867
Income tax receivables	97	98	71	48	94	79	79	79	79	79
Inventory	3 113	3 763	3 692	3 445	4 085	5 213	4 992	4 771	4 549	4 757
Accounts Payable	2 024	2 496	1 975	2 300	2 703	2 301	2 583	2 747	2 894	3 026
Current accrued liabilities	1 684	2 023	2 180	2 305	1 446	1 938	2 175	2 314	2 437	2 548
Other current liabilities	331	434	473	477	2 437	2 437	2 437	2 437	2 437	2 437
Deferred tax liabilities	368	387	190	241	280	302	339	361	380	398
Net Working Capital (NWC)	1 341	1 302	1 758	1 313	1 200	1 291	878	545	224	342
Change in NWC		(39)	456	(445)	(113)	91	(413)	(333)	(321)	118

Appendix 10: CAPEX and D&A

€ Millions	2015	2016	2017	2018	2019	2020F	2021F	2022F	2023F	2024F
Total CAPEX	**513**	**651**	**752**	**707**	**708**	**659**	**735**	**790**	**844**	**897**
Purchase of trademarks and other intangible assets	-49	-65	-74	-96	-110	-107	-123	-137	-152	-167
Purchase of property, plant and equipment	-464	-586	-678	-611	-598	-552	-612	-653	-692	-730

€ Millions	2015	2016	2017	2018	2019	2020F	2021F	2022F	2023F	2024F
Depreciation	314	329	414	426	493	459	512	551	588	625
Amortization	79	68	70	64	70	65	72	78	83	88
D&A	**393**	**397**	**484**	**490**	**563**	**524**	**585**	**629**	**671**	**713**

€ Millions	2019	2020F	2021F	2022F	2023F	2024F
Initial Value PP&E		4405	4957	5570	6223	6915
Purchase of property, plant and equipment		552	612	653	692	730
Final Value PP&E	4405	4957	5570	6223	6915	7645
Accumulated Depreciation	2025	2484	2997	3547	4136	4761
Book Value PP&E	2380	2473	2573	2675	2779	2884

€ Millions	2019	2020F	2021F	2022F	2023F	2024F
Initial Value Trademarks and Intangible Assets		2498	2605	2728	2865	3017
Purchase of trademarks and other intangible assets		107	123	137	152	167
Final Value Trademarks and Intangible Assets	2498	2605	2728	2865	3017	3184
Accumulated Amortization	1334	1399	1471	1549	1632	1720
Book Value Trademarks and Intangible Assets	1164	1206	1257	1316	1385	1464

Appendix 11: Debt

Schedule of short- and long-term Debt

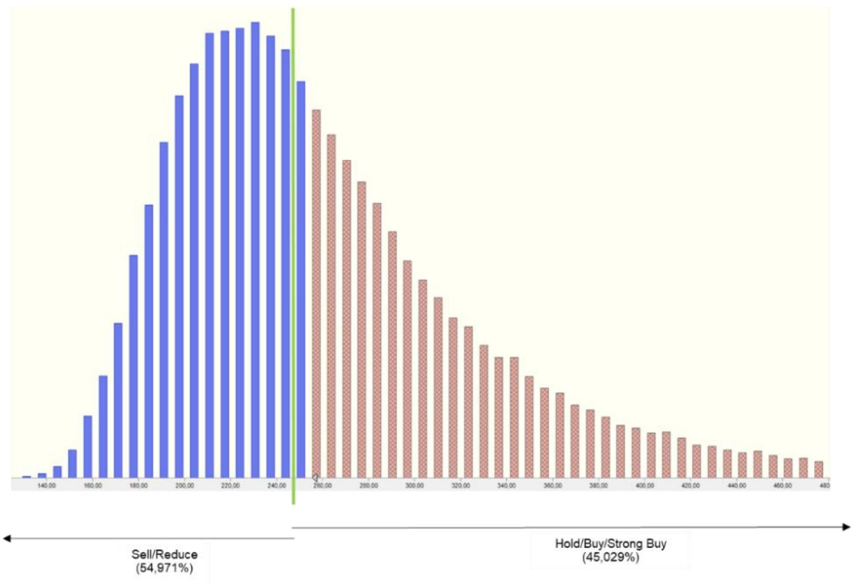
€ Millions	2019	2020F	2021F	2022F	2023F	2024F
Bank borrowings <1year	207	1217	29	0	38	0
Bank borrowings >1year		113	84	84	46	46
NEW Debt (BB's)		0	29	29	67	67
NEW Debt (Eurobond)		0	0	0	0	1000
Eurobond - 2024		500	500	500	500	0
Eurobond - 2035		500	500	500	500	500
Eurobond - 2021		598	0	0	0	0
Other Eurobonds	986	388	388	388	388	388
Equity-neutral convertible bond - 2023	484	484	484	484	0	0
Total Debt	1677	3800	2014	1985	1539	2001
Total ST Debt		1815	29	513	567	67
Total LT Debt		1985	1985	1472	972	1934

Appendix 12: Risk Target Analysis

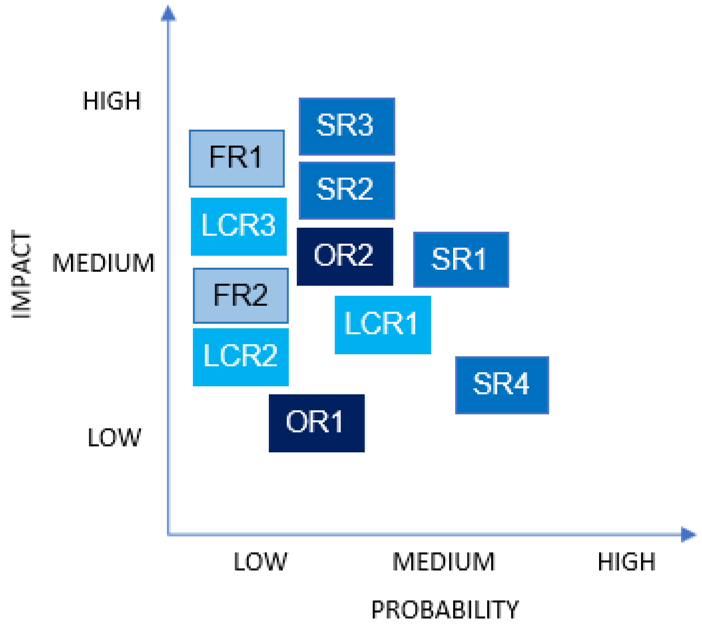
<-10%	<248,76	Sell
>-10% & <10%	**>248,76 & <304,04**	**Reduce**
>10% & <20%	>304,04 & <331,68	Hold / Neutral
>20%	>331,68	Buy

		WACC									
		4,46%	**4,76%**	**5,06%**	**5,36%**	**5,66%**	**5,96%**	**6,26%**	**6,56%**	**6,86%**	**7,16%**
Terminal Growth Rate	**1,49%**	234,65	213,17	195,30	180,20	167,28	156,08	146,29	137,65	129,98	123,12
	1,79%	258,74	232,67	211,39	193,68	178,71	165,89	154,79	145,09	136,53	128,92
	2,09%	288,94	256,56	230,72	209,62	192,06	177,23	164,52	153,52	143,90	135,42
	2,39%	327,90	286,50	254,40	228,79	207,87	190,47	175,76	163,17	152,27	142,73
	2,69%	380,10	325,13	284,08	252,27	226,88	206,15	188,90	174,32	161,83	151,02
	2,99%	453,64	376,88	322,39	281,70	**250,16**	224,99	204,44	187,34	172,89	160,51
	3,29%	564,98	449,79	373,69	319,67	279,34	248,07	223,12	202,75	185,80	171,47
	3,59%	753,37	560,18	445,98	370,54	316,99	277,01	246,01	221,28	201,08	184,27
	3,89%	1141,06	746,95	555,43	442,21	367,43	314,34	274,70	243,97	219,45	199,43
	4,19%	2399,52	1131,32	740,60	550,73	438,49	364,35	311,72	272,42	241,96	217,65

Monte Carlo Simulation	
Trials	100000
Base Case	250,16
Mean	264,79
Std Deviation	76,5
Skewness	1,66
Kurtosis	7,07
Maximum	699,27
Minimum	128,09



Appendix 13: Risk Matrix



Risk categories described in Adidas' 2019 Annual Report:

Risk categories 2019	Risk categories 2018	Potential impact	Change (2018 rating)[1]	Likelihood	Change (2018 rating)[1]
Risks related to the competitive and retail environment	Competition risks; Risks related to distribution strategy	High	↑ (Medium)	30% – 50%	
Risks related to consumer demand and product offering	Consumer demand risks	High		15% – 30%	
Macroeconomic, sociopolitical, regulatory and currency risks	Macroeconomic, sociopolitical, and regulatory risks; Currency risks	Significant		<15%	
IT and cyber security risks	IT and cyber security risks	Significant		<15%	
Risks related to tax and customs regulations	Risks related to customs and tax regulations	Significant	↑ (High)	<15%	↓ (15% – 30%)
Compliance risks	Fraud and corruption risks; Data privacy risks	Significant		<15%	
Risks related to organizational structure and change	–	Medium		30% – 50%	↑ (15% – 30%)

Appendix 14: Dividend Discount Model

Expected Growth Rate	3,0%	Terminal Growth Rate
Current Annual Dividend	3,85 €	Level of Dividends Adidas is paying in 2020
Risk-Free Rate	1,7%	
Estimated Market Return	5,2%	Market Risk Premium of Germany
Beta	0,78023541	
1 Year Forward Dividend	3,85 €	Assumption that the level of dividend payment remains stable
Discount Rate	5,8%	Cost of Equity
Dividend Discount Model Fair Value:	**137,52 €**	

$$\boxed{V_S = \frac{D_0(1+g)}{r_S - g}}$$

VS = Price Targe
D0 = Dividend at time 0 (most recent)
g = Growth rate
rS = Stockholders Required Rate of Return

Appendix 15: Multiples Valuation

Company	Market Capitalization (€ Million)	Price (€)	EV	EV/EBITDA	EV/Sales	P/E
Nike	198803	126,64	202289	45,75	5,51	50,25
Puma	11940	79,84	12594	55,03	2,4	41,84
Under Armour	6847	15,06	8009	-17,04	1,66	86,96
Skechers	5148	32,76	5935	27,44	1,17	14,2
Minimum	5148	15,06	5935	-17,04	1,17	14,2
Median	9393,5	56,3	10301,5	36,595	2,03	46,045
Maximum	198803	126,64	202289	55,03	5,51	86,96
Average	55684,5	63,575	57206,75	**27,795**	**2,685**	**48,3125**

Adidas AG	EV/EBITDA Multiple
EBITDA 2020F	2406
Enterprise Value	66888
Net Debt	-582
Non-controlling interests	261
Equity Value	67209
Number of shares outstanding	195,97
Price Target	**342,96 €**
Upside Potential	**24,08%**

Adidas AG	EV/Sales Multiple
Sales 2020F	20304
Enterprise Value	54517
Net Debt	-582
Non-controlling interests	261
Equity Value	54838
Number of shares outstanding	195,97
Price Target	**279,83 €**
Upside Potential	**1,24%**

P/E Multiple	
Net Income 2020F	1222
Equity Value	59033
Number of shares outstanding	196
Price Target	**301,23 €**
Upside Potential	**8,98%**

Average of the three multiples	**€ 308,00**

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Abbreviations

WACC Weighted Average Cost of Capital

EBIT Earnings Before Interest and Taxes

FCF Free Cash Flow

ROE Return on Equity

ROA Return on Assets

CEO Chief Executive Officer

GDP Gross Domestic Product

DCF Discounted Cash Flow

EV Enterprise Value

EBITDA Earnings Before Interest, Taxes, Depreciation and Amortization

CAPEX Capital Expenditure

PP&E Property, **Plant and Equipment**

Rf Risk Free Rate

CAPM Capital Asset Pricing Model

CAGR Compound Annual Growth Rate

g Growth Rate

EPS Earnings per Share

Tc Tax Rate

D&A Depreciation&Amortization

FCFF Free Cash Flow to the Firm

PVt Present Value

DDM Dividend Discount Model

NWC Net Working Capital

IMF International Monetary Fund

FY Forecasted Year

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Recommendation System

Level of Risk	SELL	REDUCE	HOLD	BUY
High Risk	<-10%	>-10% & <30%	>15% & <30%	>30%
Medium Risk	<-10%	>-10% & <10%	>10% & <20%	>20%
Low Risk	<-10%	>-10% & <5%	>5% & <15%	>15%